REPORT RESUMES

ED 003 797 64
WORK-STUDY CONFERENCE ON NEW EDUCATIONAL MEDIA FOR NATIONAL UNIVERSITY EXTENSION ASSOCIATION.
BY- COCHRAN, LEE W. AND OTHERS
NEBRASKA UNIV., LINCOLN
REPORT NUMBER NDEA-VIIB-254 PUB DATE 62
CONTRACT OEC-2-16-021
EDRS PRICE MF-$0.18 HC-$3.56 89P.

DESCRIPTORS- *INSTRUCTIONAL TECHNOLOGY, *ADULT EDUCATION, *INSTRUCTIONAL MATERIALS, AUDIOVISUAL AIDS, AUTOINSTRUCTIONAL AIDS, PROGRAM PLANNING, NATIONAL UNIVERSITY EXTENSION ASSOCIATION, LINCOLN, NEBRASKA

A WORK-STUDY CONFERENCE ON NEW EDUCATIONAL MEDIA FOR THE NATIONAL UNIVERSITY EXTENSION ASSOCIATION WAS HELD AT THE UNIVERSITY OF NEBRASKA, APRIL 28-29, 1962 TO DEMONSTRATE, DISCUSS, AND INVESTIGATE WAYS OF USING THE NEW EDUCATIONAL MEDIA IN UNIVERSITY EXTENSION WORK. A TOTAL OF 132 DELEGATES FROM 33 STATES ATTENDED. THE ENTIRE PROGRAM WAS DESIGNED TO INVOLVE EACH DELEGATE IN AS MANY DIFFERENT EXPERIENCES AS POSSIBLE IN THE PLANNING, PRODUCTION, AND UTILIZATION OF EDUCATIONAL MEDIA, AS IT RELATED TO ADULT EDUCATION. BASED UPON RECOMMENDATIONS BY THE PLANNING COMMITTEE, THE MATERIALS USED IN THE CONFERENCE WERE TO BE ASSEMBLED INTO AN "ADULT EDUCATION MEDIA KIT" AND DISTRIBUTED TO ADULT EDUCATION GROUPS OVER THE UNITED STATES. ALSO PLANNED IS A HANDBOOK ON "NEW EDUCATIONAL MEDIA FOR ADULT EDUCATION." (JC)

ED003797

B-25
FINAL
ABCDEF

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

SUMMARY TECHNICAL REPORT

WORK-STUDY CONFERENCE ON NEW EDUCATIONAL MEDIA

for

NATIONAL UNIVERSITY EXTENSION ASSOCIATION

Nebraska Center for Continuing
Education

April 28-29, 1962

The dissemination activities reported herein was performed pursuant to a Contract with the United States Office of Education, Department of Health, Education, and Welfare. Contract # OE 2-16-021

TECHNICAL REPORT ON
WORK-STUDY CONFERENCE ON NEW EDUCATIONAL MEDIA
for
NATIONAL UNIVERSITY EXTENSION ASSOCIATION

April 28, 29, 1962
Lincoln, Nebraska

TECHNICAL REPORT ON CONTRACT # OE 2-16-021, DEPARTMENT OF HEALTH, EDUCATION AND WELFARE, U. S. OFFICE OF EDUCATION, WASHINGTON 25, D. C.

PURPOSE OF THE CONFERENCE

To demonstrate, discuss, and investigate methods and ways of using all types of New Educational Media in University Extension work. To study the possible use of all types of New Educational Media in such Extension Activities as:

- Evening Classes
- Off-Campus Extension Classes
- Conferences and Institutes
- Correspondence Study
- Community Development

Through the preparation of a variety of special materials, the conference delegates were exposed to, and had an opportunity to discuss, many new developments such as educational television, multi-media presentations, and group programmed learning experiences.

The Conference was planned primarily for Deans, Directors, and Heads of Departments in University Extension work. The Conference was further planned to influence these University Extension staff members to plan Educational Media Conferences in their own states and areas, so this conference information would have the very widest dissemination.

PLANNING FOR THE CONFERENCE

The planning for the Work-Study Conference on New Educational Media was made by the following committee members of the Division of Audio-Visual Communication, National University Extension Association:

Chairman: Lee W. Cochran, Director, Bureau of Audio-Visual Instruction, Extension Division, State University of Iowa, Iowa City, Iowa

Robert E. de Kieffer, Director, Bureau of Audio-Visual Instruction, University of Colorado, Boulder, Colorado

(Conference committee continued)

John L. Kunkel, Supervisor, Audio-Visual Services, Bureau of Audio-Visual Instruction, University of Nebraska, Lincoln, Nebraska.

Wesley C. Meierhenry, Assistant Dean, Teachers College, University of Nebraska, Lincoln, Nebraska.

Robert M. Reed, Director of Special Projects, WHA-TV, University of Wisconsin, Madison, Wisconsin.

Robert E. Stepp, Head, Bureau of Audio-Visual Instruction, University of Nebraska, Lincoln, Nebraska. (Chairman-Local Arrangements)

The entire program was planned to involve each delegate to the Conference in as many different experiences as possible in the planning, production, and utilization, of educational media, as it related to Adult Education.

Considerable delay in making certain assignments for staff members to produce special types of programmed materials was caused by Contract # OE 2-16-021, Department of Health, Education, and Welfare, U. S. Office of Education, Washington, D. C., dated December 29, 1961, not being received by the "Contractor", the University of Nebraska, until early March, 1962. Certain "programmed materials" already available had to be substituted in place of producing new programs, as planned in the original concept of this Conference.

THE CONFERENCE

The Work-Study Conference on New Educational Media for the National University Extension Association, was held at the Nebraska Center for Continuing Education, University of Nebraska, Lincoln, Nebraska, April 28-29, 1962. The conference was attended by 131 invited delegates from 60 institutions and from 33 states and 2 delegates attended from Canada. The program was divided into the following elements:

Enclosure "A" Enclosure "B"

1. Importance of the Conference to Adult Education leaders in the United States.

2. A film report on the Policy Statement of the National University Extension Association, defining adult education problems in the United States. This film report was used to orientate all members of the Conference regarding the broad problem of education and training of adults.

3. "Educational Media and Adult Education - A Group Programmed Learning Experience" - This presentation was made by multiple slide projection - 2" x 2" color, with a background of media research

(No. 3 continued)

being given and with questions inserted for the participants to mentally answer during the showing.

4. Programmed learning was presented in several phases.
   a. The first phase was the distribution of a 40 frame booklet "Introduction to Programmed Instruction" by David J. Klaus, American Institute for Research, Pittsburg, Pennsylvania, to each of the participants prior to their attending the Work-Study Conference, and asking them to work through the entire booklet. This provided each participant with a background on programmed instruction. Enclosure "C"

   b. The second phase was the presenting of a film "One Step at a Time", to introduce the methods used in programming.

   c. The third phase was the entire conference separating into three (3) groups where under the leadership of a person well trained in programming, each delegate worked through the booklet "A Programed Primer on Programing" by Susan Meyer Markle, Lewis D. Eigen, and P. Kenneth Komoski, The Center for Programed Instruction, Inc., New York, N. Y. Time was provided at this time to discuss programming and its implications to adult education. Enclosure "D"

   d. The fourth phase was a presentation on "What Do We Know About Programmed Learning?" by Robert T. Filep, Center for Programmed Instruction, New York, N. Y. This talk was illustrated with transparencies for the overhead projector.

   e. In addition, a display of teaching machines and programmed materials were arranged during the entire conference so that all delegates could visit the exhibit and experiment with the machines.

5. The values to In-Service and Pre-Service Teachers of Audiovisual Instructional Materials was made by a Multi-Media Approach. This presentation, prepared by Syracuse University, was used to stress the "why" of educational media. Used in the presentation was a 16mm motion picture, three (3) 2" x 2" slide projectors, and two overhead 10" x 10" transparency projectors synchronized in such a manner that at many times three different screens were being used in the demonstration.

6. Educational television was also presented in several phases as shown:

   a. The group again divided into five (5) meeting rooms. Each delegate was given an "Agree-Disagree Form". Each participant filled out part of this form before seeing the televised program. A leader in educational television was present in each group for discussion. Enclosure "E"

(No. 6 - continued)

b. The second phase of the television presentation was the showing of a 30 minute video taped program over station KUON-TV, University of Nebraska, Lincoln, Nebraska, and received in each of the five (5) discussion and viewing rooms. This program titled "The Challenge of Change" was especially prepared for this meeting by the Oregon State System of Higher Education under the direction of Ralph Steetle. The program was planned to show the impact educational television has made in the United States and gave many examples of types of programs being used in adult education.

c. The third phase of the television presentation was small group discussions on "Educational Television and Its Application to Future Adult Education Programs".

d. The fourth phase was where both before the discussion and following the discussion, each delegate again filled out his agree-disagree form to see whether they had changed their opinion regarding different implications of educational television.

7. At a dinner meeting, a presentation was made on "Some New Educational Functions" by Dean Walter K. Beggs, Teachers College, University of Nebraska.

8. Following the dinner meeting on Saturday evening, the group was again divided into smaller groups. At this division, the groups were placed in interest groups as follows:

    a. Community Development

    b. Conferences and Institutes

    c. Correspondence Study

    d. Evening Classes

    Each group had as co-chairmen, a subject matter specialist and an educational media specialist. Each group discussed the types of media most helpful to its educational problems, and prepared recommendations to be presented to the entire Conference the next day. All discussion leaders were instructed to visualize the group recommendations. Enclosure "F"

    Note: As part of the Conference, a Graphic Center was established with a competent graphic artist to assist discussion leaders in preparing visual presentations.

9. Final reports were presented by the co-chairmen of the interest groups, and visualized for the entire Conference. The reports were summarized

(No. 9 continued)

as follows: (All reports were presented on 10" x 10" transparencies)

a. Community Development:

Some representative functions of community development:

- Attitudes
- Values
- Developing prespectives (relations of community to regional, national, world)
- Involvement
- Identification of Community
- Sense of Community
- Presentation of patterned facts and concepts
- Motivation
- Decision
- Examination and analysis
- Methods and techniques:
  - forums - interview - dramatic presentation - documentary
  - slides - figures - facts - comparisons - overhead projector
  - billboards - posters - pictures
  - films - examples animated cartoons
  - pictorized booklets
  - radio - opinions - tape recordings

b. Conferences and Institutes:

- Most of the new media can be used
- Instruction is needed for conference and institute staff
- Use of closed circuit television
- Use of graphic materials
- Multi-media kits
- Audio-visual consultant service for conference and institute staff

c. Correspondence Study:

- Television - video tape - closed circuit - broadcast
- Audio - tapes - disc recordings - tele lecture - radio
- Graphic and Manipulated Media - exhibit packets - format design - charts - diagrams - maps - photos - kits
- Projected media - slides - filmstrips - motion pictures - transparencies
- Programmed Instruction - teaching machines - programmed textbooks

Note: This group recommended as follows:

That we explore all audio-visual media for potential use in the preparation of correspondence study materials.

That the unique advantages of particular audio-visual media be incorporated into the design of correspondence study materials.

That the design and development of correspondence study materials be accomplished through a cooperative or team effort: i. e. instructor-audio-visual specialist and correspondence study specialist.

(Correspondence Study Recommendations - continued)

That encouragement be given to inter-school cooperation in the development of correspondence study materials.

That consideration be given to the establishment of a National Audio-Visual Correspondence Study Components Laboratory to assist in the development of materials and research.

d. Evening Classes:

Need for programs at the adult level.
Need for information pertaining to what has been developed in the armed services.
Materials for reference use - tapes - teaching machine programs, etc. to be used in supplementary fashion.
Development of awareness of need and training in effective use.
Equip rooms for evening class and encourage others to attend.
Use educational television for supplementary purpose.
Returns per dollar of investment in new methods as compared with present methods.

10. A short report was made on the Educational Media Council, and its work toward the production of an Educational Media Directory. It was conceded that this directory was badly needed to enable adult education staff to locate educational media of all types.

11. The Conference summary was given by Charles F. Schuller, Michigan State University, East Lansing, Michigan, by evaluating the recommendations coming from each of the interest groups, and suggesting possible future action by Divisions and Committees of the National University Extension Association.

EVALUATION

The planning committee for the Work-Study Conference on New Educational Media had discussed the possibility of securing an immediate evaluation of the Conference from the delegates attending. After discussion with a number of delegates during the Conference, it was decided to conduct a post evaluation of the meeting. Such an evaluation instrument was prepared and mailed to each person attending the Work-Study Conference. Enclosure "G"

An evaluation return from 50% of the Conference participants indicated the following:

1. To what extent did the Work-Study Conference on New Educational Media help you gain a better understanding of new media in adult education?

6% rated superior
42% rated very good
27% rated good
19% rated average
3% rated below average
3% rated little value

(Evaluation return continued)

2.	Effectiveness of the "systems" approach (sequential topic programming) used at this conference.	72% rated from superior to good
3.	Evaluation of the entire Work-Study Conference on New Educational Media.	5% rated superior 48% rated very good 26% rated good 18% rated average 1½% rated below average 1½% rated little value
4.	The highest rating of any individual item on the Conference program was the "Multi-Media" presentation.	23% rated superior 39% rated very good 27% rated good 6½% rated average 3% rated below average 1½% rated little value

RESULTS FROM THE CONFERENCE

Note: These results were assessed by the Planning Committee in a meeting following the Conference:

1. The Work-Study Conference on New Educational Media was a success.

2. It brought to adult education leaders all over the United States a new concept in the possible use of educational media. The terms media, cross-media, and media kits, were common terms by the end of the meeting.

3. The demonstrations and presentations fulfilled the objective of the purpose of holding this conference by forcefully showing how educational media can be used in varied adult education situations.

4. Great interest was shown by a number of the delegates in the possibility of securing the materials used in the demonstrations and presentations for use in local and area work-study conferences.

   Note: The Planning Committee for this Conference recommended at the close of the meeting that the materials used in this meeting be assembled into an "Adult Education Media Kit" for use by adult education groups all over the United States. They further recommended that this "Kit" be organized and deposited at the Bureau of Audio-Visual Instruction, University of Nebraska, Lincoln, Nebraska, for future use. The entire kit of materials, or parts of the kit, will be distributed by the University of Nebraska, on request, at a nominal charge to cover inspection, cleaning, and mailing of the projected materials.

(Media kit continued)

The "Presentation Kit" will include:

a. Magnetic tape - Welcome - by Knute O. Broady, Director, Extension
(Approx. 10 min.) Division, University of Nebraska.

b. Magnetic tape - "Importance of the Conference to Adult Education"
(Approx. 30 min.) by Wesley C. Meierhenry, University of Nebraska.

c. 16 mm Motion Picture Film - "To Carry Light and Opportunity", a film report on the 1961 Policy Statement of NUEA, produced by the State University of Iowa, Iowa City, Iowa.
(16 mm sound - black & white - 12 min.)

d. Two (2) sets of 2" x 2" slides - color - "Educational Media and Adult Education - A Group Programmed Learning Experience", produced by William H. Allen, University of Southern California, Los Angeles, California. (2" x 2" slides)
(Equipment necessary - Two automatic slide projectors and two screens)
(Presentation time - approx. 50 min.)

e. Magnetic tape - "What Do We Know About Programmed Learning?" by Robert T. Filep, Center for Programmed Learning, New York, N. Y.
(Approx. 45 min.)

f. "Multi-Media Presentation" produced by Syracuse University, Audio-Visual Center, Syracuse, New York.
(Running time - approximately 30 min.)
(Equipment needed - 16 mm sound motion picture projector
3 - automatic 2" x 2" slide projectors
2 - 10" x 10" overhead transparency projectors
3 - screens
(Materials included:)
1 - 16mm motion picture - Note: This film carries all the sound for the entire presentation.
2" x 2" slides for use on 3 automatic slide projectors
10" x 10" transparencies
1 - cue sheet for the entire presentation

g. Kinescope - of "The Challenge of Change" produced by Oregon System of Higher Education, Portland, Oregon.
(Equipment needed - 16 mm sound motion picture projector and screen)
(Materials included - kinescope - running time approximately 30 min.)

h. Copies of the "Agree-Disagree Sheets" used in the television presentation will be provided. Persons using this "kit" have approval to reproduce in the quantity desired.

(Presentation Kit continued)

i. Magnetic tape - "Some New Educational Functions" - presented by Walter K. Beggs, Dean, Teachers College, University of Nebraska.

j. One copy each of the following, with information as to where they can be purchased in desired quantities:

   a. "Introduction to Programmed Instruction", by David J. Klaus

   b. "A Programed Primer on Programing", by Markle, Eigen, and Komoski.

Note: All materials in the "Adult Education Media Kit" will be boxed and ready to ship.

MEDIA HANDBOOK COMMITTEE

Prior to the Work-Study Conference on New Educational Media, a committee was appointed to plan and produce a handbook on "New Educational Media for Adult Education". Chairman of this committee is Robert E. de Kieffer, Director, Bureau of Audio-Visual Instruction, University of Colorado, Boulder, Colorado. One meeting of the committee was held immediately following the Work-Study Conference, to formulate content of the "handbook", and to establish deadlines for production.

Enclosure "H"

A preliminary report indicates rules for producing the handbook and suggestions to be included in the handbook. Assignments have been made for producing the different segments of the "handbook", and the committee is at work on the writing assignments. It is thought that by August 1, 1962, a rough draft of the "handbook" will be ready for further study.

FUTURE DEVELOPMENTS IN EDUCATIONAL MEDIA IN ADULT EDUCATION

The Work-Study Conference on New Educational Media for National University Extension Association, April 28-29, 1962, Lincoln, Nebraska, presented many new concepts relating to the planning, development, and use of new media in adult education. Several of the NUEA Divisions and Committees have made preliminary plans toward a cooperative effort of member colleges and universities to plan and produce varied educational media to assist in adult education.

Since, in most instances, the planning and production of films, filmstrips, kinescopes, video tapes, slide sets, and transparencies, are quite expensive, a cooperative effort will be necessary. The Division of Correspondence Study, NUEA, has already recommended to the NUEA Board of Directors, "that consideration be given to the establishment of a National Audio-Visual Correspondence Study Components Laboratory to assist in the development of materials and to conduct research". It is thought that other Divisions and Committees of NUEA will realize the need for the planning and production of varied media to meet the needs for the expanding adult education programs. It is further anticipated that other Divisions and Committees within NUEA will recommend "Components Laboratories" for other adult education interests.

(Future developments in educational media continued)

It is extremely difficult to measure the results of such a meeting as the Work-Study Conference on New Educational Media. It is known that the large majority of delegates to this Conference returned to their respective states with a determination to further study the use of educational media.

The following pages of pictures taken during the Work-Study Conference on New Educational Media, Lincoln, Nebraska, April 28-29, 1962, will show some of the activities and groups.

THIS REPORT WAS PREPARED BY: Lee W. Cochran,
Director,
Bureau of Audio-Visual Instruction,
State University of Iowa,
Iowa City, Iowa

DATED: June 11, 1962

KEY
TO PICTURES ILLUSTRATING THE ACTIVITIES OF THE WORK-STUDY CONFERENCE ON NEW EDUCATIONAL MEDIA, LINCOLN, NEBRASKA

No. 1 - Delegates working on Program Primer as part of the experience on Programmed Learning.

No. 2 - Same as number 1.

No. 3 - John J. Long, University of Oklahoma, leading discussion in one of the "Programmed Learning" sessions.

No. 4 - John L. Kunkel, University of Nebraska, illustrates a "programming method" on the overhead projector while serving as leader on one group.

No. 5 - Robert T. Filep, Center for Programmed Learning, New York, speaker on the subject "What Do We Know About Programmed Learning?"

No. 6 - One of the delegates experiments with a teaching machine in the exhibit area.

No. 7 through 11 - Small groups working the "Agree-Disagree" forms and viewing the special television program produced for this conference, and televised over station KUON-TV, University of Nebraska.

No. 12- Scene in general session of two projectors used for presentation by William H. Allen, University of Southern California.

No. 13- William H. Allen, University of Southern California, preparing slides for his presentation on "Educational Media and Adult Education - A Group Learning Experience".

No. 14- Five operators with equipment in position for "Multi-Media Presentation" by Robert A. Cox, Syracuse University. Note three screens were used in this presentation.

No. 15- I. C. Boerlin, Pennsylvania State University, and co-chairman of the Community Development group, roughs out the report in a discussion session.

No. 16- Robert A. Cox, Syracuse University, introducing the "Multi-Media Presentation".

No. 17- I. C. Boerlin, Pennsylvania State University, presenting the groups report on Community Development and use of Educational Media, at a general session.

No. 18- Gene Faris, Indiana University, prepares rough draft of a report for group consideration.

No. 19- Stanley C. Robinson, University of Illinois, presented the report of the Evening Classes group at the general session.

No. 20- (l to r) John Alford, University of Wyoming, and John L. Davies, State University of Iowa, report on the Correspondence Study applications of New Educational Media.

No. 21- Donald Lacock, Manager, Graphic Section, State University of Iowa, producing transparencies for one of the group session reports.

No. 22- John R. Hedges, State University of Iowa, reports on the Conference and Institutes group recommendations relating to New Educational Media.

No. 23- Wesley C. Meierhenry, University of Nebraska, who made the presentation on "Importance of the Conference to Adult Education".

No. 24- Knute O. Broady, Director of University Extension and the Center for Continuing Education, University of Nebraska, welcomed the conference group.

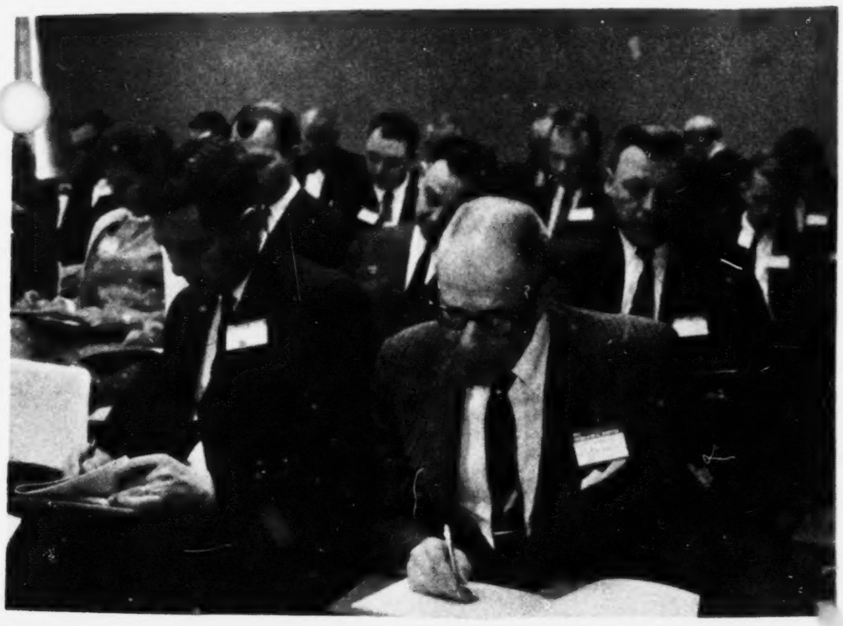
No. 25- Robert A. Cox, Syracuse University, following the Multi-Media Presentation.

No. 26- Delegates during one of the general sessions.

No. 27- Robert J. Blakely, Dean, Extension Division, State University of Iowa, provided the script and coordinated the production of the film "To Provide Light and Opportunity", a film report on the 1961 Policy Statement of NUEA.

No. 28- (l to r) Robert M. Reed, University of Wisconsin, chairman of the television presentation; Lee W. Cochran, State University of Iowa, chairman of the conference planning committee; Charles F. Schuller, Michigan State University, gave a summary of the conference, and Robert E. de Kieffer, University of Colorado, co-chairman of the Division of Audio-Visual Communication, NUEA.

Programmed Learning and Adult Education



1

4

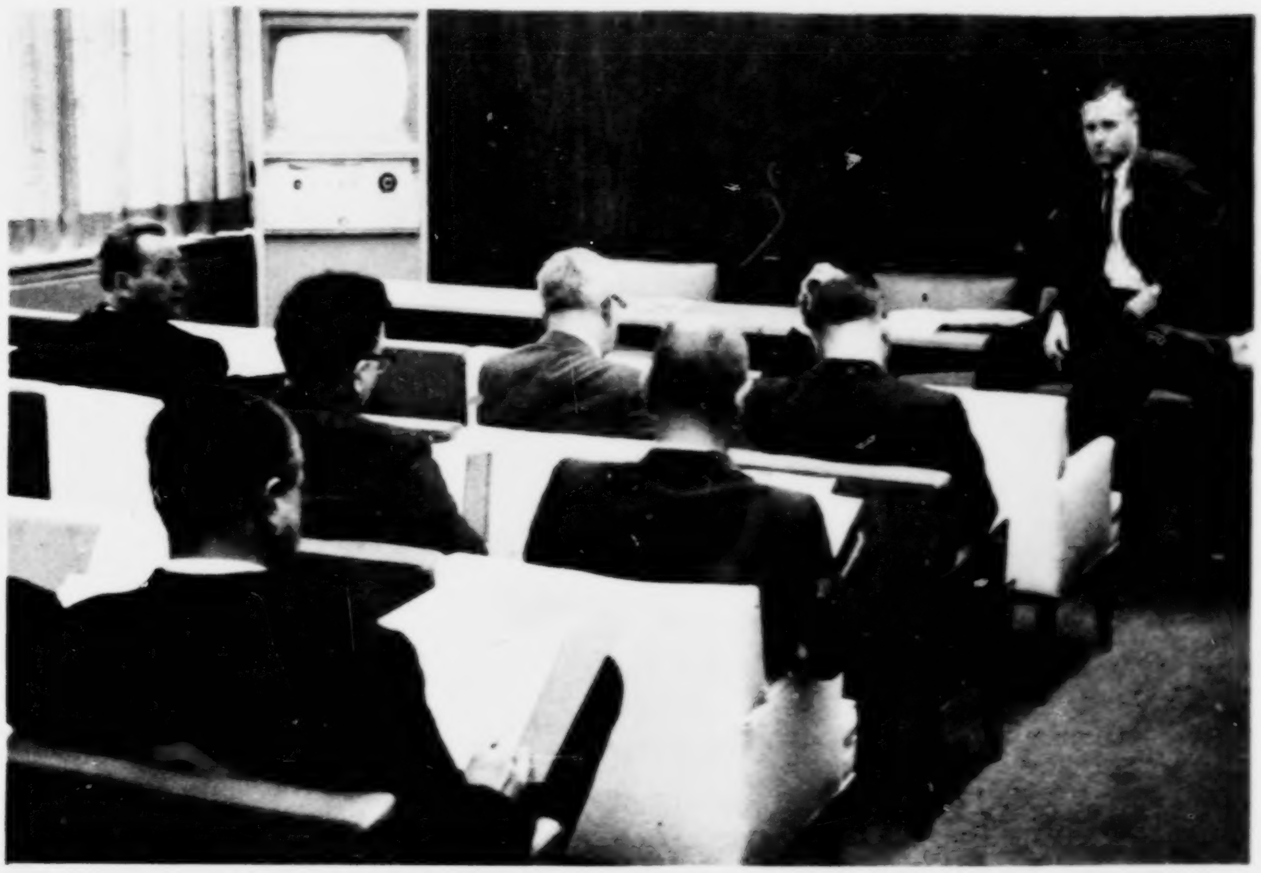
2

5

3

6

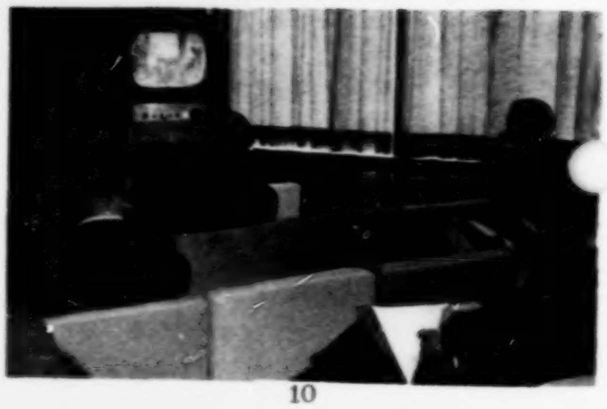
Television and Adult Education



7

8

9

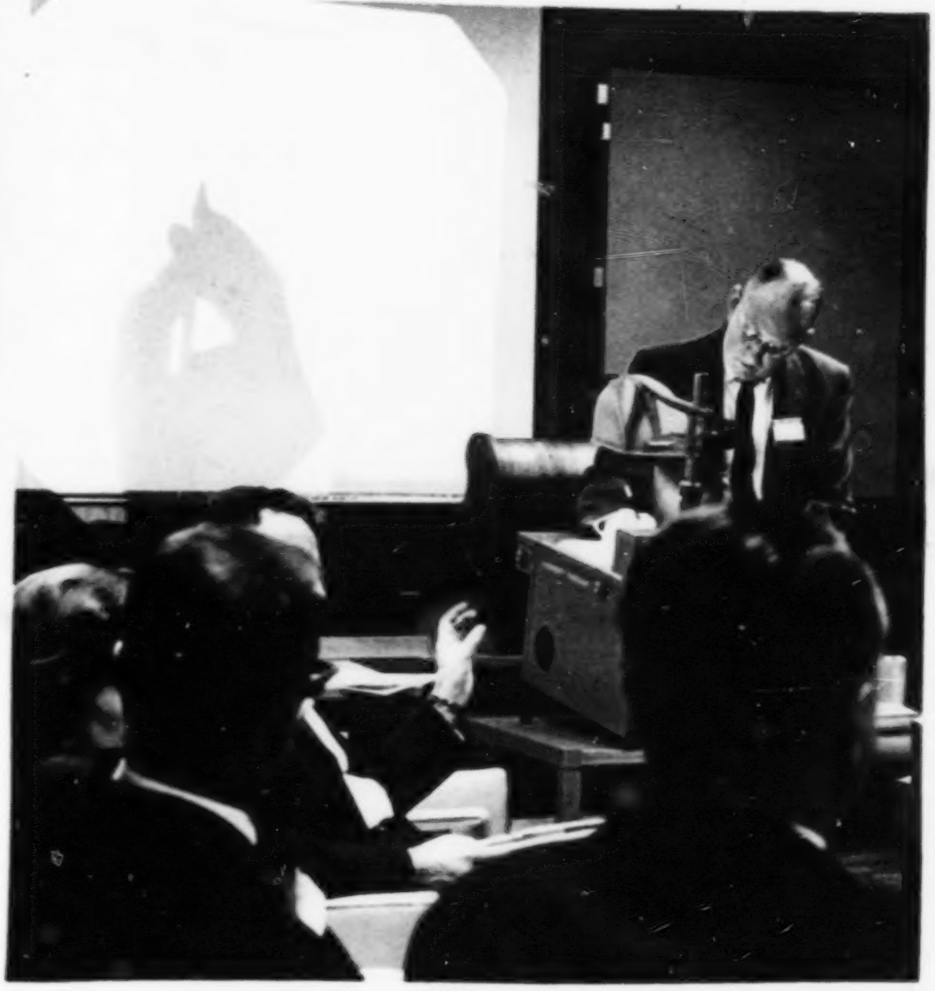


10

11

Application of Media in Adult Education

12



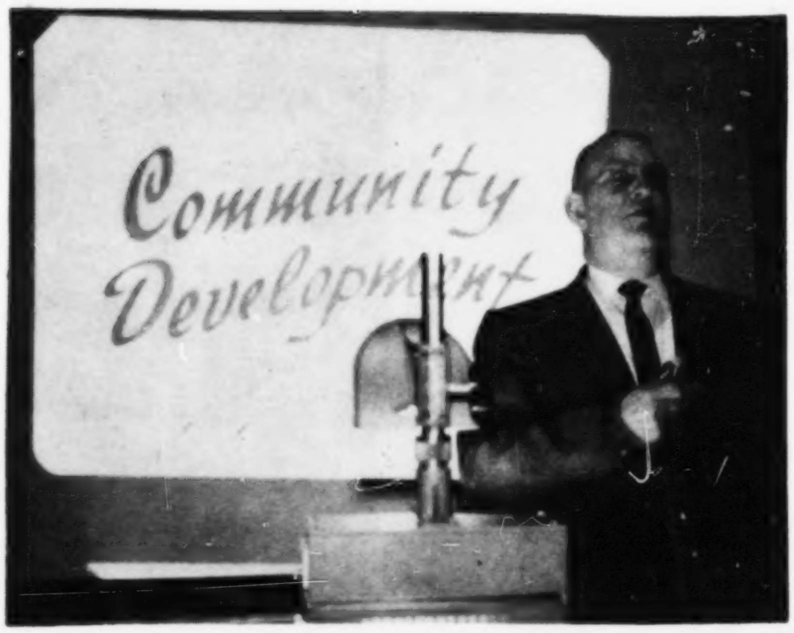
15

13

16

14

Conference Reports


Community
Development

17

rrespondence
Study

20

18

21

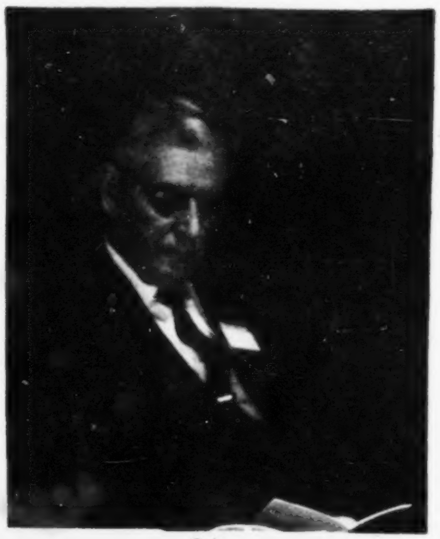
vening
Classes

19

22

General Sessions and Speakers

23


24

25

26

27

28

Encl. "A"

WORK-STUDY CONFERENCE ON NEW EDUCATIONAL MEDIA

Workshop Participants

CALIFORNIA

Berkeley

Paul Sheats, Dean
Extension Division
University of California

Jane Zahn, Head
Education Extension
University of California

Los Angeles

Phil Frandson
Assistant to the Dean
Extension Division
University of California

CANADA

Montreal

Jean Houpert, Director
Extension Division
University of Montreal

Winnipeg

A. S. R. Tweedie, Director
University of Manitoba

COLORADO

Boulder

D. Mack Easton, Dean
Extension Division
University of Colorado

Avon Bristow
Acting Director, Class Instruction
University of Colorado

DELAWARE

Newark

G. C. Godbey, Dean
Extension Division
University of Delaware

GEORGIA

Atlanta

L. V. Johnson, Director
Georgia Institute of Technology

Richard Weigand, Director
Short Courses & Conferences
Georgia Institute of Technology

HAWAII

Honolulu

Doris Martin
College of General Studies
University of Hawaii

DISTRICT OF COLUMBIA

Washington

Roy B. Minnis
U. S. Office of Education

IDAHO

Moscow

Paul Kaus
Extension Division
University of Idaho

ILLINOIS

Champaign

Stanley C. Robinson, Dean
Extension Division
University of Illinois

Neil F. Garvey
Correspondence Director
Extension Division
University of Illinois

Chicago

John T. Wilson, Director
Extension Division
University of Chicago

Daniel B. Lang
339 E. Chicago

ILLINOIS

Chicago (continued)
Enid Hill
CSLEA
4819 Greenwood Avenue

DeKalb
J. E. Clettenbert
Director of Extension
Northern Illinois University

Carbondale
Raymond H. Dey
Southern Illinois University

INDIANA

Bloomington
Smith Higgins, Dean
Extension Division
Indiana University

Virgil Hunt, Director
Indianapolis Center
Indiana University

Gene Faris
Assistant in Circulation
Audio-Visual Center
Indiana University

George Kirk, Assistant Director
Conference Bureau
Indiana University

Gary
John C. Buhner, Director
Gary Center
Indiana University

Lafayette
L. O. Nelson, Head
Correspondence Study
Extension Division
Purdue University

IOWA

Ames
Marvin Gould
Administrative Assistant
Iowa State University

Cedar Falls
Paul Brimm, Principal
Price Laboratory School
State College of Iowa

Iowa City
R. J. Blakely, Dean
Extension Division
State University of Iowa

L. J. Davies, Director
Bureau of Instructional Services
State University of Iowa

Eloise Snavely, Editor
Correspondence Study

Gordon Wasinger
Extension Division
State University of Iowa

John Hedges, Associate Director
Bureau of Audio-Visual Instruction
State University of Iowa

KANSAS

Emporia
Henry C. Lindsey, Dean
Extension Division
Kansas State Teachers College

Lawrence
Howard Walker, Director
University Extension
University of Kansas

Gerald Pearson, Director
Extension Classes, Extension Division
University of Kansas

E. A. McFarland, Director
Conferences and Institutes
University of Kansas

KENTUCKY

Lexington
R. D. Johnson
Executive Dean
University of Kentucky

LOUISIANA

Baton Rouge
J. W. Brouillette, Director
Extension Division
Louisiana State University

J. C. McCollister, Jr., Assistant
Extension Activities
Louisiana State University

MARYLAND

Baltimore
Richard A. Mumma, Dean
Extension Division
John Hopkins University

College Park
Stanley J. Drazek, Dean
Extension Division
University of Maryland

Olive Vervi
Conference Coordinator
University of Maryland

MICHIGAN

Ann Arbor
E. J. Soop, Director
Extension Division
University of Michigan

John A. Wilkins, Bus. Mgr.
Extension Division
University of Michigan

East Lansing
Charles F. Schuller, Director
Audio-Visual Center
Michigan State University

Marquette
Claude A. Bosworth, Dean
Extension Division
Northern Michigan College

Oakland
Lowell Eklund, Dean
Extension Division
Michigan State University of Oakland

Ypsilanti
Ralph A. Gesler, Assistant Director
Eastern Michigan University

MINNESOTA

Minneapolis
J. M. Nolte, Dean
General Extension Division
University of Minnesota

Huntington Miller, Associate Dean
Extension Division
University of Minnesota

MISSISSIPPI

Jackson
E. F. Yerby, Director
Extension Division
University of Mississippi

Maurice Inman, Director
Evening Classes
Extension Division
University of Mississippi

MISSOURI

St. Louis
E. S. Brandenburg, Dean
Extension Division
Washington University

James K. Lahr, Director
Conferences, Extension Division
Washington University

NEBRASKA

Lincoln
K. O. Broady, Dean
Extension Division
University of Nebraska

G. B. Childs, Head
Correspondence Instruction
Extension Division
University of Nebraska

D. D. Sjogren, Supervisor
Correspondence Course Development
Extension Division
University of Nebraska

George Uhlig, Supervisor
Pre-College Instruction
Extension Division
University of Nebraska

Lincoln (continued)

Edor Ellingson, Supervisor
Evening Classes
Extension Division
University of Nebraska

Jan Cureton
Extension Division
University of Nebraska

H. C. Ebmeier, Consultant
School Building Service
State Department of Education

Jack McBride, Director
KUON-TV
University of Nebraska

H. B. Rames, Training Director
Dorsey Laboratories

Omaha

Donald Z. Woods, Dean
College of Adult Education
University of Omaha

Otto W. Snarr
University of Omaha

NEVADA

Ely

Kenneth W. Clarke, Director
Off-Campus Center
University of Nevada

Reno

Lloyd A. Drury, Dean
Extension Division
University of Nevada

NEW HAMPSHIRE

Durham

Alfred T. Kurik, Director
Extension Division
University of New Hampshire

NEW JERSEY

New Brunswick

Madison E. Weidner, Associate Dean
Rutgers, The State University

NEW MEXICO

Albuquerque

Harold O. Reid, Director
Extension Division
University of New Mexico

M. H. McMichael
University of New Mexico

NEW YORK

New York City

Russell F. W. Smith, Associate Dean
New York University

Henry Alter
National/Television & Radio Center
Educational

Syracuse

Alexander N. Charters, Dean
Extension, University College
Syracuse University

Robert H. Snow, Administrator
Syracuse University

NORTH CAROLINA

Chapel Hill

Charles F. Milner
Director of Extension
University of North Carolina

James Steagall, Director
Conferences and Short Courses
University of North Carolina

OKLAHOMA

Norman

Russell R. Myers, Director
Correspondence Study
University of Oklahoma

John J. Long
Audio-Visual Department
University of Oklahoma

Oklahoma City

John Dunn
Oklahoma Television Authority

OKLAHOMA (continued)

Stillwater

J. Conner Fitzgerald, Director
Division of Continuing Education
Oklahoma State University

L. F. Sheerar, Head
Conferences and Institutes
Oklahoma State University

OREGON

Portland

Viron Moore, Assistant Dean
Oregon State System of Higher Education

Donald R. Larson, Assistant Dean
Oregon State System of Higher Education

PENNSYLVANIA

University Park

Edward L. Keller, Director
Continuing Education
Pennsylvania State University

T. S. Goas, Associate Director
Continuing Education
Pennsylvania State University

F. B. Fischer, Associate Director
for Administration
Continuing Education
Pennsylvania State University

W. R. Bechdel
Extension Division
Pennsylvania State University

I. C. Boerlin
Audio-Visual Communications
Pennsylvania State University

SOUTH CAROLINA

Columbia

Nicholas Mitchell, Director
Extension Division
University of South Carolina

TENNESSEE

Knoxville

Charles Hartsell
Director of Extension
University of Tennessee

William D. Barton, Jr.
Ass't Director, Extension Division
University of Tennessee

Memphis

Ralph A. Hyde

Oak Ridge

Chester Gray
Oak Ridge Institute of Nuclear Studies

TEXAS

Austin

James R. D. Eddy, Dean
Extension Division
University of Texas

Norris A. Hiatt, Associate Dean
Extension Division
University of Texas

L. E. McDonald, Director
Correspondence Instruction
University of Texas

UTAH

Salt Lake City

Y. T. Witherspoon
Administrator of Classes
University of Utah

Provo

Harold G. Clark, Dean
Adult Education & Extension Service
Brigham Young University

Phileon B. Robinson
Adult Education & Extension Service
Brigham Young University

WASHINGTON

Bellingham

Patrick R. Penland, Director
Extension Services
Western Washington State College

Pullman

Norman A. Braden
Director of Extension
Washington State University

Edwin E. Baxter, Jr.
Assistant to the Director
Extension Division
Washington State University

Seattle

Frank Anderson, Director
Extension Division
University of Washington

Martin Chamberlain, Director
University of Washington

WISCONSIN

Madison

Harold W. Montross, Director
Informal Instructional Services
Extension Division
University of Wisconsin

Robert Dick, Director
Field Services
Extension Division
University of Wisconsin

Roger W. Axford, Associate Director
Informal Instructional Services
Extension Division
University of Wisconsin

WYOMING

Laramie

John A. Marvel, Director
Extension Division
University of Wyoming

John D. Alford, Assistant Director
Division of Adult Education & Commun
Service
University of Wyoming

Laurence A. Walker, Coordinator
Extension Classes
University of Wyoming

CONFERENCE SPEAKERS

William H. Allen, University of Southern California, Los Angeles
Walter K. Beggs, Dean, Teachers College, University of Nebraska, Lincoln
Robert A. Cox, Syracuse University, Syracuse, New York
Robert T. Filep, Center for Programed Learning, New York City
Ralph Steetle, Oregon State System of Higher Education, Portland

CONFERENCE COMMITTEE

Lee Cochran, Bureau of A-V Instruction, State University of Iowa, Iowa City
Lida Cochran, Bureau of A-V Instruction, State University of Iowa, Iowa City
Robert E. deKieffer, Bureau of A-V Instruction, University of Colorado, Boulder
W. C. Meierhenry, Teachers College, University of Nebraska, Lincoln
J. L. Kunkel, Bureau of A-V Instruction, University of Nebraska, Lincoln
Robert M. Reed, University of Wisconsin, Madison
Robert E. Stepp, Bureau of A-V Instruction, University of Nebraska, Lincoln

CONFERENCE STAFF

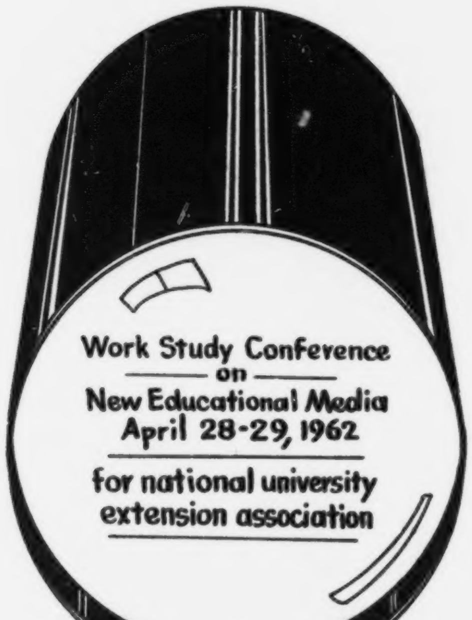
Kenneth Hueske, Bureau of A-V Instruction, University of Nebraska, Lincoln
Ron Kurtzer, Bureau of A-V Instruction, University of Nebraska, Lincoln
Donald Lacock, Bureau of A-V Instruction, State University of Iowa, Iowa City
Marian Lacock, Bureau of A-V Instruction, State University of Iowa, Iowa City
Ruth Moline, Bureau of A-V Instruction, University of Nebraska, Lincoln
William Stewart, Bureau of A-V Instruction, University of Nebraska, Lincoln
Don Walz, Bureau of A-V Instruction, University of Nebraska, Lincoln
Ray Wiman, Teachers College, University of Nebraska, Lincoln

FOCUS ON

Encl. "B"

Work-Study Conference
on
New Educational Media
April 28 - 29, 1962

for national university extension association


Work Study Conference
on
New Educational Media
April 28-29, 1962
for national university
extension association

Nebraska Center for
Continuing Education,

University of Nebraska,
Lincoln, Nebraska

Welcome!

The Division of Audio-Visual Communications of NUEA is honored to have as its guests a this Conference the deans and directors o University Extension and representatives from other divisions within NUEA. The program is planned to present the latest concepts in New Educational Media.

We hope you will thoroughly explore with us the possible uses of new educational media in all phases of University Extension.

If this Work-Study Conference is of value to you, the Planning Committee would welcome your suggestions regarding how the information might be disseminated in your own state or area.

The Conference has been made possible through the National Defense Education Act, 1958, Title VII, U.S. Office of Education, Department of Health, Education and Welfare.

Lee W. Cochran, chairman
Robert E. deKieffer, co-chairman
John L. Kunkel
Wesley C. Meierhenry
Robert M. Reed
Robert E. Stepp

A Graphics Center has been set up in the Alliance Room for participants' use during the Conference. An artist and photographer will be on duty to help prepare the visuals for presentation on Sunday morning at General Session.

NEBRASKA CENTER ROOM LOCATIONS

Alliance	Second Floor
Auditorium	First Floor
Beatrice	Second Floor
Fremont	Second Floor
Hastings	Second Floor
Kearney	Second Floor
Lincoln	First Floor
Norfolk	Second Floor
North Platte	Second Floor
Omaha	Lower Level
Scottsbluff	Second Floor
York	Second Floor

SATURDAY EVENING, Contd.

8:00 Division Sessions

COMMUNITY DEVELOPMENT (CD)
BEATRICE ROOM
Co-chairmen:
Claude A. Bosworth
Northern Michigan College
I. C. Boerlin
Pennsylvania State University

CONFERENCES AND INSTITUTES (CI)
FREMONT ROOM
Co-chairmen:
James K. Lahr
Washington University
L. R. Lindeman,
Brigham Young University

CORRESPONDENCE STUDY (CS)
HASTINGS ROOM
Co-chairmen:
John Davies,
State University of Iowa
John Alford
University of Wyoming

EVENING CLASSES (EC)
Co-chairmen: *YORK ROOM*
Stanley C. Robinson
University of Illinois
Charles F. Schuller,
Michigan State University

SUNDAY MORNING

8:00 Breakfast Service Starts in
LINCOLN ROOM

10:30 GENERAL SESSION *AUDITORIUM*
Robert E. Stepp, chairman
University of Nebraska

DIVISION PRESENTATIONS
(visualized)
Community Development
Conferences and Institutes
Correspondence Study
Evening Classes

"THE EDUCATIONAL MEDIA COUNCIL AND THE MEDIA DIRECTORY"
Lee W. Cochran

11:30 CONFERENCE SUMMARY
Wesley C. Meierhenry

12:00 Adjournment

CONFERENCE COMMITTEE

MR. LEE COCHRAN, Director
Bureau of Audio-Visual Instruction
State University of Iowa
Iowa City, Iowa

DR. ROBERT E. deKIEFFER, Director
Bureau of Audio-Visual Instruction
University of Colorado
Boulder, Colorado

DR. JOHN L. KUNKEL, Supervisor
Audio-Visual Services
Bureau of Audio-Visual Instruction
University of Nebraska
Lincoln, Nebraska

DR. WESLEY C. MEIERHENRY
Assistant Dean, Teachers College
University of Nebraska
Lincoln, Nebraska

MR. ROBERT M. REED
Director of Special Projects
WHA-TV, University of Wisconsin
Madison, Wisconsin

DR. ROBERT E. STEPP, Head
Bureau of Audio-Visual Instruction
University of Nebraska
Lincoln, Nebraska

MEDIA HANDBOOK COMMITTEE

DR. ROBERT E. deKIEFFER

MR. L. R. LINDEMAN, Chairman
Department of Audio-Visual Communication
Brigham Young University
Provo, Utah

MR. JOHN J. LONG, Director
Educational Materials Service
University of Oklahoma
Norman, Oklahoma

DR. CHARLES F. SCHULLER, Director
Audio-Visual Center
Michigan State University
East Lansing, Michigan

MR. ROY P. WRIGHT, Director
Audio-Visual Services
University of Washington
Seattle, Washington

CONFERENCE STAFF

MRS. LIDA COCHRAN
Audio-Visual Instructor
State University of Iowa
Iowa City, Iowa

MR. KENNETH HUSKEY
Audio-Visual Technician
Bureau of Audio-Visual Instruction
University of Nebraska
Lincoln, Nebraska

MR. DONALD LACOCK, Manager
Graphics Section
Bureau of Audio-Visual Instruction
State University of Iowa
Iowa City, Iowa

MISS RUTH MOLINE, Supervisor
Audio-Visual Library
Bureau of Audio-Visual Instruction
University of Nebraska
Lincoln, Nebraska

MR. WILLIAM STEWART
Audio-Visual Technician
Bureau of Audio-Visual Instruction
University of Nebraska
Lincoln, Nebraska

MR. KAZ TADA, Manager
University Photographic Productions
University of Nebraska
Lincoln, Nebraska

MR. RAY WIMAN
Audio-Visual Coordinator
University High School
University of Nebraska
Lincoln, Nebraska

DR. JOHN L. KUNKEL

DR. ROBERT E. STEPP, Chairman

PROGRAM

SATURDAY AFTERNOON

2:00 "MULTI-MEDIA PRESENTATION" *AUDITORIUM*
Robert A. Cox
Syracuse University

3:00 Coffee *SECOND FLOOR*

3:15 "WHAT DO YOU THINK ABOUT EDUCATIONAL TELEVISION?"
Agree-Disagree Form, Phase I
Robert M. Reed, chairman
University of Wisconsin

Group A *BEATRICE ROOM*
John Dunn
Oklahoma Television Authority
Group B *FREMONT ROOM*
Claude Hempin
Station KNME, Albuquerque
Group C *HASTINGS ROOM*
Martin Busch
University of South Dakota
Group D *YORK ROOM*
Burton Paulu
University of Minnesota
Group E *KEARNEY ROOM*
Jack McBride
University of Nebraska

3:30 "TELEVISION AND ADULT EDUCATION"
Ralph Steetle
Oregon State System of Higher Education
(program televised by KUON-TV, University of Nebraska)

4:00 Agree-Disagree Form, Phase II

4:15 Group Discussions
"EDUCATIONAL TELEVISION AND ITS APPLICATIONS TO FUTURE ADULT EDUCATION PROGRAM"

4:45 Agree-Disagree Form, Phase III

5:00 Afternoon Adjournment

SATURDAY EVENING

6:30 Dinner *OMAHA ROOM*
Robert E. deKieffer presiding,
University of Colorado

"SOME NEW EDUCATIONAL FUNCTIONS"
Walter K. Beggs,
University of Nebraska

SATURDAY MORNING

7:15 Breakfast *OMAHA ROOM*

8:00 Welcome *AUDITORIUM*
Knute O. Broady
University of Nebraska

8:10 "IMPORTANCE OF THE CONFERENCE TO ADULT EDUCATION"
Wesley C. Meierhenry
University of Nebraska

8:30 "A FILM REPORT ON THE 1961 POLICY STATEMENT OF NUEA"
State University of Iowa Production

8:40 "EDUCATIONAL MEDIA AND ADULT EDUCATION--A GROUP PROGRAMMED LEARNING EXPERIENCE"
William H. Allen
University of Southern California

10:00 "ONE STEP AT A TIME" (film)
American Institute of Research Production

10:30 Coffee *LOWER LEVEL*

11:00 "WHAT IS PROGRAMMED LEARNING?"

Discussion Group I
NORFOLK ROOM
Leader: Gene Faris
Indiana University

Discussion Group II
NORTH PLATTE ROOM
Leader: John J. Long
University of Oklahoma

Discussion Group III
SCOTTSBLUFF ROOM
Leader: John L. Kunkel
University of Nebraska

SATURDAY NOON

12:15 Luncheon *OMAHA ROOM*
Lee W. Cochran presiding,
State University of Iowa

"WHAT DO WE KNOW ABOUT PROGRAMMED LEARNING?"
Robert T. Filep,
Center for Programmed Learning, New York

ABOUT THE SPEAKERS

DR. WILLIAM H. ALLEN: Director of Research, Department of Cinema, University of Southern California, Los Angeles; President-elect of DAVI;presently DAVI Commissioner of Research Directions; Editor of AV Communication Review; research consultant for U.S. Office [illegible] Education on Title VII program and currently conducting research on "A Study of the Non-Linearity Variable in Filmic Presentation."

DR. WALTER K. BEGGS: Dean and Professor of History and Principles of Education and School Administration, Teachers College, University of Nebraska, Lincoln; member of International Relations Committee of the American Association of Colleges for Teacher Education and of the Visitation and Analysis Committee of the National Council for the Accreditation of Teacher Education.

DR. KNUTE O. BROADY: Director of University Extension Division and the Nebraska Center for Continuing Education, and Professor of School Administration, Teachers College, University of Nebraska; member of U.S. National Commission for UNESCO; Chairman of Research Committee for Division of General Extension of Land Grant Colleges Association.

MR. ROBERT A. COX: Director, Educational Film Library and Instructor, School of Education, Syracuse University, Syracuse, New York; Editor, quarterly newsletter, *The Previewer*; Chairman, Film Media Committee,DAVI and active in New York Audio-Visual Council.

MR. ROBERT T. FILEP: Executive Associate and Secretary, Center for Programmed Instruction,Inc.; Editor of Center's bulletin, Programmed Instruction; official representative to the Educational Media Council; Recent research paper entitled, "A Comparison of The Three Modes of Presenting a Programmed Instruction Sequence."

DR. WESLEY C. MEIERHENRY: Assistant Dean, Professor Education, and Director, Advanced Professional Division (advisor to advanced students specializing in AV) Teachers College, University of Nebraska, Lincoln; member of AVCR Editorial Board and DAVI Board of Directors; consultant DAVI Field Service Program and to U.S. Office of Education, Title VII.

DR. RALPH STEETLE: Associate Dean, and Director of Educational Media, General Extension Division, Oregon State System of Higher Education, Portland; for ten years prior, Executive Director of Joint Council on Educational Television, Washington, D.C.

Encl. "C"

INTRODUCTION TO PROGRAMMED INSTRUCTION

by david j. klaus

AMERICAN INSTITUTE FOR RESEARCH
PITTSBURGH 32, PENNSYLVANIA

introduction

The development of more efficient methods for teaching new facts and concepts always has been a primary aim in education and technical training. Recently, systematic investigations of the learning process has led research psychologists to new insights as to how the presentation of instructional material can be improved. Some of the most important of these principles have been integrated into a new technique of instruction called Programmed Instruction.

The fundamental purpose of this approach is to promote the orderly and controlled development of skill and knowledge by providing the learner with appropriate assistance during learning. Because of the way in which Programmed Instructional materials are prepared, they serve the same role as a good instructor, helping the learner understand, assimilate, and retain new facts and concepts. One of the most important attributes of Programmed Instruction is that it makes constructive use of almost all the time and effort put forth by the learner. Very capable individuals can proceed as rapidly as they like while slow learners can take the time they need to thoroughly understand difficult concepts. In this way, Programmed Instruction offers a high degree of flexibility in dealing with the interests and abilities of each learner.

This booklet has been prepared to provide a better understanding of the techniques used in the development of these materials and to illustrate some of the advantages of Programmed Instruction.

David J. Klaus, Associate Director
Training and Education

instructions

This is a program on Programmed Instruction. It is designed to acquaint you with some of the principles on which programming is based and to give you experience in learning from a program. To profit most from the program, follow these instructions carefully.

1. As you will learn, a program consists of a series of small steps. Do each step in the proper order, writing out your answers fully in the space provided.

2. Do not work down the page; instead, turn to the next page after each step. The steps have been numbered to help you.

3. As you begin each step, read it carefully and then write the word or words that belong in the blank, even if you have to guess. A program is not a test, so each step may seem simple because it is worded to help you get the correct answer. It is important that you fill in every blank.

4. A blank requiring only one word looks like this: [   ]. When two or three words are required, the blank looks like this: [*   ]. Some blanks require more extensive answers; use your own words for blanks that look like this: [**   ].

5. After you have written your answer to all the blanks in a step, turn the page and compare your answer with the one which appears on the following page. Then, turn the page again to go on to the next step.

AIR © 1962

Copyright 1962 by the American Institute for Research
410 Amberson Avenue, Pittsburgh 32, Pennsylvania

Printed in U. S. A.

40

easier with programmed
instruction

end here

CONTINUE HERE

0

program
learning

TURN BOOK AROUND
AND

CONTINUE HERE

20

programmed
individuals to learn at
their own pace

TURN BOOK AROUND
AND

CONTINUE HERE

10

step
active responding
practice

TURN BOOK AROUND
AND

begin here

1 Almost everyone finds it difficult to learn new things. We could learn much more than we do now if learning were made ▭ for us.

TURN THE PAGE ▶

11 Another assist to learning is having immediate confirmation as to the correctness of each ▭. The learner recognizes his progress when he receives ▭.

TURN THE PAGE ▶

21 Because no instructor is required, learners can proceed through ▭ materials at their ▭ even when they study in a group.

TURN THE PAGE ▶

31 One reason why a program can insure learning is because it has been tried out. In fact, good programs are ▭ many, many times.

40 Now that you have seen a program, don't you agree that learning is ••__________________________.

TURN THE PAGE ▶

30 Because programming gives the learner all the help he needs, a good __________ can be responsible for insuring that __________ will occur.

TURN THE PAGE ▶

20 A tutor permits individuals to learn at their own pace. This is equally true of __________ instruction which also permits ••__________________________.

TURN THE PAGE ▶

10 Practice is important at each __________ during learning. Only through •__________ does the learner get the __________ he needs to master the materials.

1

easier (simpler)

TURN THE PAGE ▶

11

response

immediate confirmation

TURN THE PAGE ▶

21

programmed

own pace

TURN THE PAGE ▶

31

tried out

39

programmed instruction
good

TURN THE PAGE ▶

29

small steps, which are carefully sequenced, and encourage active responding, plus careful guidance, and immediate confirmation

TURN THE PAGE ▶

19

programmed
not (rarely)

TURN THE PAGE ▶

9

responding
active responding

2 It is easier to learn when we have help. Some new things are very difficult to ☐ if we do not have any ☐.

TURN THE PAGE ▶

12 Furnishing reward for learning is one of the reasons for supplying [•] as to the correctness of each response.

TURN THE PAGE ▶

22 Programmed instruction and other kinds of instruction are very ☐ to each other. Both try to make learning as ☐ as possible for the learner.

TURN THE PAGE ▶

32 We know a good program will teach, even when each individual learns himself at his [•], because it has been [•] many times.

39 In these few steps, you have learned several important facts about *☐ and how a ☐ program is prepared.

TURN THE PAGE ▶

29 A good program can be described as one which has **☐ ☐ ☐.

TURN THE PAGE ▶

19 When learning from ☐ instruction, the needed assistance is incorporated into the materials. For this reason, help from an instructor is ☐ required.

TURN THE PAGE ▶

9 Active responding during learning also is important. Practice is helpful because it requires active ☐. More thorough learning results from *☐.

2

learn
help

TURN THE PAGE ▶

12

immediate confirmation

TURN THE PAGE ▶

22

similar (comparable)
easy

TURN THE PAGE ▶

32

own pace
tried out

38

easier
programmed instruction
is not required

TURN THE PAGE ▶

28

small steps
sequenced (ordered)
responding
quidance
confirmation

TURN THE PAGE ▶

18

programming
programmed

TURN THE PAGE ▶

8

small steps
steps
sequence (order)

3 With the proper kind of help, we can ______ faster and better than we usually do. Programmed instruction can give us the necessary ______.

TURN THE PAGE ▶

13 Each small step should require ______ from the learner. The learner should then receive ______ ______ as to the correctness of his response.

TURN THE PAGE ▶

23 A good program has several characteristics. For example, it presents the material in ______ which have been arranged in the proper ______.

TURN THE PAGE ▶

33 Each time it is tried out, the ______ is revised. Only after several tryouts and ______ is the program finally ready for use.

38 Programmed instruction can make learning faster, ________, and more interesting. In addition, costs can be reduced because, with • ________, an instructor •• ________.

TURN THE PAGE ▶

28 A good program has five important characteristics: • ________, which are properly ________, and encourage active ________, plus careful ________, and immediate ________.

TURN THE PAGE ▶

18 It is possible to make learning easier by ________ the lessons. The use of programming in teaching is called ________ instruction.

TURN THE PAGE ▶

8 Learning is easier when the material to be learned is presented in • ________ and when these ________ have been arranged in the proper ________.

3

learn
help

TURN THE PAGE ▶

13

active responding
immediate confirmation

TURN THE PAGE ▶

23

small steps
sequence (order)

TURN THE PAGE ▶

33

program
revisions

37

teaching machines
program

TURN THE PAGE ▶

27

confirmation

TURN THE PAGE ▶

17

programming

TURN THE PAGE ▶

7

sequence (order)
previously (already)

4 Many things are known about how people ______ best. For example, learning is not as easy in large steps as it is in ______ ______.

TURN THE PAGE ▶

14 One of the most important kinds of help during learning is guidance. The learner is helped to make the correct response with the proper ______.

TURN THE PAGE ▶

24 A good program consists of a series of ______ arranged in the ______. It also encourages active ______ by the learner.

TURN THE PAGE ▶

34 Programs have been used in both education and training. Schools, industry, and the military have found that ______ can insure rapid and thorough ______.

37 Since special books can be used, it is not necessary to present programs with __________. The important point is to use a good __________.

TURN THE PAGE ▶

27 Because reward or praise is always important in learning, a good program informs the learner as to the correctness of his response with immediate __________.

TURN THE PAGE ▶

17 The technique used in preparing materials to make learning easier is called programming. Dividing material into small steps is an example of __________.

TURN THE PAGE ▶

7 It is important that steps be presented in the proper __________. Each step should be built on what has __________ been learned.

4

learn
small steps

TURN THE PAGE ▶

14

guidance

TURN THE PAGE ▶

24

small steps
proper sequence (order)
responding

TURN THE PAGE ▶

34

programs
learning

36

teaching machines

TURN THE PAGE ▶

26

guidance
guidance

TURN THE PAGE ▶

16

guidance
immediate confirmation

TURN THE PAGE ▶

6

sequence (order)
before

5 We can learn more easily when material is presented to us in *__________. The smaller the steps, the **__________ __________.

TURN THE PAGE ▶

15 A learner is prevented from practicing errors if he is given careful __________. Eliminating errors is very difficult if they have been __________ repeatedly.

TURN THE PAGE ▶

25 To help him master new information, each step in a program requires *__________ from the learner. Frequently repeating responses helps him __________ them longer.

TURN THE PAGE ▶

35 Algebra, physics, electronics, and insurance are some of the subjects now being taught by *__________, and new subjects are being __________ every day.

36 When programs are used, they are sometimes presented in a book, but often a teaching machine is used. There are many varieties of ________.

TURN THE PAGE ▶

26 To prevent the learner from ever practicing errors, a program provides careful ________ as to the correct answer. Gradually, the amount of ________ is reduced.

TURN THE PAGE ▶

16 To insure their correctness, the learner's responses must be preceded by careful ________. When responses are made, they should be followed by ________.

TURN THE PAGE ▶

6 Learning also is easier if everything we have to learn is arranged in the proper ________. Thus, simple facts should be presented ________ difficult concepts.

5

small steps
easier it is to learn

TURN BOOK AROUND AND CONTINUE HERE

15

guidance
practiced (made)

TURN BOOK AROUND AND CONTINUE HERE

25

active responding
remember (retain)

TURN BOOK AROUND AND CONTINUE HERE

35

programmed
instruction
programmed

TURN BOOK AROUND AND CONTINUE HERE

The American Institute for Research is a private, non-profit organization which carries out basic and applied investigations in the behavioral sciences and offers related technical services.

The application of programming techniques to specific topics and objectives requires careful study and investigation. Assistance in these and other problems concerning the better utilization of human resources is available on a contract basis from the American Institute for Research.

AIR

American Institute for Research
410 Amberson Avenue
Pittsburgh 32, Pennsylvania

Additional copies of this booklet are available for fifty cents each.

Encl. "B"

A PROGRAMED PRIMER ON PROGRAMING

volume I

Susan Meyer Markle,
Lewis D. Eigen, and
P. Kenneth Komoski

The Center for Programed Instruction, Inc.

A PROGRAMED PRIMER ON PROGRAMING

Volume I

PRINCIPLES

by

Susan Meyer Markle, Lewis D. Eigen, and P. Kenneth Komoski

Second Edition

The Center for Programed Instruction, Inc.
365 West End Avenue
New York 24, New York

The Center for Programed Instruction, Inc., is a non-profit educational organization. All proceeds from the sale of articles and programs are used to defray printing costs and to further research in programed instruction.

Copyright © 1961 by Susan Meyer Markle, Lewis D. Eigen, and P. Kenneth Komoski. All rights reserved.

Published by The Center for Programed Instruction, Inc.,
365 West End Avenue, New York 24, New York. 501

CHAPTER I

PRINCIPLES ON WHICH PROGRAMED INSTRUCTION IS BASED

	1. Teaching is the arranging of conditions that enable a student to learn. Programed instruction is a new technique of arranging the conditions of learning, so p_______d instruction is a teaching technique.
1. programed	2. Instructional techniques, whether lectures or discussions or audio visual aids, can be used by teachers to implement differing educational philosophies. Teachers can use the new technique of programed i_________ to further their goals.
2. instruction	3. Programed instruction is a new technique of _____ing students what we want them to know.
3. teaching	4. Do educators agree on what students should know?
4. No—there are many different goals.	5. If a teacher can say exactly what his students should learn, and if there is a program available that teaches this, then this teacher can use p________ i_________ to further his teaching goals.

5. programed instruction	6. Programed instruction brings into the classroom effective and efficient techniques developed by experimental psychologists for teaching complex behavior. Learning may occur under many diverse conditions, but programed instruction employs those conditions found to be ________ and ________ .
6. effective efficient	7. Any teaching technique which enables students to master a subject can be called an (effective—efficient) teaching technique. *Choose one.* In other words, it works.
7. effective	8. Is an effective teaching technique necessarily efficient? ___
8. No.	9. One condition for facilitating learning is knowledge of results. If we ask "What number from 1 to 10 am I thinking of?", and a student guesses "Four", telling him "That's right" lets him k___ that he guessed correctly.
9. know	10. If a student has been told that his guess was correct, and we ask him again what number we WERE thinking of, will he tell us the correct number the second time? ____
10. Yes. (Assume he's a decent chap.)	11. If, guessing a number between 1 and 10, the student is told that "four" is wrong, will he guess "four" the second time? ___ Will he be sure to guess correctly the second time? ___
11. No. No. (There are 9 other numbers.)	12. If a student guesses "Four", and he is told "No, it is six", he gets (more—less) information than if he is told "No, four is wrong."
12. more	13. If a student is told "No, it is six" when he guessed "Four" and then asked to guess again, he is (likely—unlikely) to answer "Six".

13. likely (He isn't guessing, of course.)	14. Under which conditions is a student likely to respond correctly to the question a second time? a) He is told only that his first answer is wrong. (Yes—No) ___ b) He is told that his first answer is right. (Yes—No) ___ c) He is told that he was wrong and what the correct answer is. (Yes—No) ___
14. a) No. b) Yes. c) Yes.	15. If a student is guessing a number from 1 to 10, and he is told "No" after each incorrect guess, he will eventually discover the correct response. As a teaching technique, a simple "No" is ef______ . Because the student could make nine incorrect guesses, the simple "No" is not a very ef______ teaching technique.
15. effective efficient	16. Unless there are only two choices, telling a student that he is wrong does not insure a correct response the second time the question is asked. If a student who is RIGHT is told what the correct answer is rather than simply "Yes", he is (likely—unlikely) to give the correct response the second time.
16. likely	17. To confirm the response of the student who was correct, and to inform the student who was incorrect, both students may read or be told the ______ _____ .
17. correct answer	18. Suppose you are asked "Guess a whole number between three and five." You won't be guessing because you already know the answer. Do you need to have your correct "guess" confirmed in order to be sure you are correct?
18. No. (Unless you're looking for tricks!)	19. As you go through this program, the correct answers are available so you may check each response you make. Do you find yourself (a) looking at each answer, or do you (b) just check those answers where you have some doubt about the response you made? (a or b) ____

19. *Your report.* Some people do one, some the other.	20. Even the best students make careless errors at times. Providing a student with the correct answer, when he "really" knows it but didn't give it, may reduce the tendency to be careless and does inform him that he has been ________ (if he reads it).
20. careless or incorrect	21. For the student who responds correctly but is uncertain that he is correct, giving him the correct answer so he can check his response provides ________ation of his response. For the student who has responded erroneously, for whatever reason, seeing the correct answer provides ______ation concerning what his response should have been.
21. confirmation information (You only confirm correct answers!)	22. *SUMMARY* Providing knowledge of results in the form of the correct answer is an effective teaching technique because: a) it confirms the correct response if the student is unsure of his response; b) it informs the student who is incorrect, not only that he was mistaken, but also what his response should have been; c) it informs the student who was careless that he was careless and reminds him of the correct answer.
	23. A student learns, not what he reads or is told, but what the book or lecture leads him to do. This principle of active responding or participation is well validated by research. Students do learn more and better if they _______ .
23. respond or participate or do something	24. Problem: A student does an inadequate job on his spelling homework. On a test he misspells one of the words. Throughout the week, before the teacher has corrected the spelling tests, the student repeats his misspelling on several other papers. When the test is finally returned with the misspelled word marked "Wrong", the student will have (an easy—a difficult) task changing his spelling habit.
24. a difficult	25. In order to prevent a student from practicing an error and in order to confirm a response that a student may not be quite sure of, knowledge of results should be given __________ after the student responds.

25. immediately **or** **right (soon)**	**26. Students can, and do, unlearn wrong responses and acquire the alternative correct responses. However, it takes time to learn the misinformation and additional time to unlearn it and acquire correct responses. Learning the correct response in the first place is the most ef_______ procedure.**
26. efficient	**27. In some cases it can be said that we LEARN FROM our mistakes. On the other hand, there is experimental evidence that, in many cases, we LEARN our mistakes. Even a mistake which has been followed by "Wrong" tends under certain conditions to be repeated.** **An individual learns what he has been led to do, and if he has been led to respond erroneously, he often learns the _____ even when told "Wrong".**
27. error **or** **mistake** ***or equivalent***	**28. The most efficient teaching procedure will lead the student to respond and will include techniques which lead him to respond _______ly.**
28. correctly (accurately) ***or equivalent***	**29. Correcting a student when he is in error is (more—less) efficient than leading him to be correct.**
29. less	**30. Programed instruction is a teaching technique based on the following principles:** **1. If he is to learn the material, the student should _______ __ it;** **2. If he is to learn efficiently, the student's responses should be _______ ;** **3. To evaluate his own progress, the student should be given. . . . .**

30. 1. respond to or participate in or interact with, *or equivalent*
2. correct or right
3. knowledge of results or the correct answer or confirmation of correct responses.

CHAPTER II

TECHNIQUES FOR INSURING CORRECT RESPONSES

	31. Programers have given a name to certain techniques employed for insuring correct responses. Some call them cues while others call them prompts. A "cue" or "______" is a technique of insuring a correct response.
31. prompt	**32. When a student knows nothing about a subject, he needs more than a hint or prompt to help him respond correctly. When he knows all about the subject, he (does—doesn't) need prompts to help him respond correctly.**
32. doesn't	***Do not answer this old item.*** **"1. Teaching is the arranging of conditions that enable a student to learn. Programed instruction is a new technique of arranging the conditions of learning, so p_ _ _ _ _ _ _d instruction is a teaching technique."** **33. When a student knows nothing about a subject, he must be given information or carefully led to discover information. Technical terms are hard to discover! Look at item 1 in this program. Were you led to discover the technical term 'programed' or were you told? ______**

33. told	***Please refer to frame 33. Inspect item 1.*** **34. You were given the new technical term 'programed'. Also, a large number of prompts were used to insure the selection of that word. Underlining and the initial and final letters were used. A special prompt was used to "force" you to spell 'programed' our way. What is the prompt that was intended to force a single m? ____________________**
34. giving the number of blanks **or** **showing the number of letters** **or** **p_ _ _ _ _ _ _d** ***or equivalent***	**35. By the time you reached item 5 (chapter 1), you were supposed to know the technical name for the new technique. The information—the name—is no longer provided. The response space reads: p______ i________ . The initials, p and i, aid the "student" in arriving at the expected answer, so they are ______s.** ***T.T.—give the technical term.***
35. prompts	**36. A question or an incomplete sentence is a kind of stimulus to which a student responds. If he already knows the answer, should we give him a prompt? ___**
36. No. (He doesn't need it.)	**37. When a student knows nothing about the subject, the programer provides information in some way. When the student knows the subject, the student can provide the information in answering questions and completing sentences. Between these two points, no knowledge and knowledge, the student needs help.** **Prompts are provided to help the student respond to material he has not yet thoroughly learned because we want the student's response to be _______ .**
37. correct	**38. A student knows something when he can tell about it without help, and when he can use the information in new situations.** **"Telling about it without help" is, in technical terms, "_______ing _______ly without ______s."**
38. responding correctly **prompts**	**39. If a student needs to be given ten items on a particular subject in order to master it, the third item in this teaching sequence should have (more—fewer) prompts than the seventh item.**

39. more	**40.** To insure a correct response when new terms and concepts are introduced, the programer uses prompts. A student knows the subject when he can respond correctly without prompts. To get from the first stage (many prompts) to the final stage (no prompts), we obviously must . . . . the prompts. *This is a deductive item. Deduce!*
40. withdraw or reduce *or equivalent*	**41.** The term 'FADING' is used to describe the withdrawal of prompts in a programed sequence. In English, we use the word 'fading' to describe a gradual process of change. From its English meaning, you can guess that prompts are withdrawn _______ly.
41. gradually	**42.** The technique of gradually withdrawing the prompts in a programed sequence is called ______ .
42. fading	**43.** If a student can respond correctly to an item which contains many prompts, we (can—cannot) assume that he has mastered the subject.
43. cannot	**44.** A student knows the subject when he can make the appropriate responses without prompts. But if prompts are faded too rapidly, many students will make . . . .
44. errors or mistakes *or equivalent*	**45.** Prompting is a technique of aiding the student to respond correctly while he is learning. In order to demonstrate that he has learned, he must be able to respond correctly _______ ______s.
45. without prompts	**46.** Without looking back, see if you can answer this one. Techniques for insuring that students make correct responses are called prompts or ___s.

46. This illustrates poor programing. Many people won't remember the word 'cue'. *See discussion in next item.*	47. Experiments with programs have shown that students are likely to forget incidental information in items. They remember best the information they actively respond to. In item 31, chapter 2, the words 'cue' and 'prompt' were given as synonyms. You responded by copying the word 'prompt', which has been used many times since then. If the programer had wanted to insure retention of the word 'cue', you, the student, should have been given a chance to _______ 'cue' somewhere.
47. respond or use or write (copy is o.k.)	48. Individual students will differ on which bits of incidental information they will retain and how much they will retain. If a particular term or concept or relationship is considered important, it (should—should not) just be mentioned incidentally.
48. should not	49. Because incidental information is not likely to be retained, it should not be included in programs, even as motivational material. Do you agree with this statement? ___
49. Your opinion.	50. The student going through a program is acquiring knowledge in small steps. The student is provided with a small amount of new information to which he responds in a way which indicates he attended to the important part of it. This is a _____ ____ forward in his learning.
50. small step	51. A sequence of items—moving from the introductory item to items with prompts to final items in which the student responds with no prompts—represents a series of _____ _____ in learning.
51. small steps	52. A small step forward does NOT require that the response has to be small. We could teach long division, for instance, by requiring at step 1, the first number in the quotient, at step 2, step 1 plus the multiplication, at step 3, steps 1 and 2 plus subtraction, and so forth. Although the student is learning how to do the division in (small—large) steps, each response he makes is getting (longer—shorter).

52. small **longer (The last "step" in one particular program takes an hour!)**	**53. If a programer requires the student to take too large a step, the student will . . . .**
53. goof **or** **fail** **or** **make errors** ***or equivalent***	**54. The amount of time taken to complete a frame in a program (is—is not) a measure of the size of the step represented by the frame.**
54. is not	**55. A typical example of small steps forward is represented by a sequence which moves from strongly prompted to weakly prompted to unprompted items—i.e., when prompts are _____ . *Tech. Term***
55. faded (fading)	**56. A small step is a step toward mastery that the student is capable of taking without . . . .**
56. failing **or** **making errors** ***or equivalent***	**57. Since small steps are defined in terms of almost errorless progress toward mastery, college students who didn't know a subject could use a program designed for fourth graders. True or false?** **They should use the same program. True or false?**
57. True. (If the 4th graders can do it, the college students can!) **False. (It would undoubtedly be inefficient for college students.)**	**58. Programers use two techniques to insure a high proportion of correct responses from students:** **1) The student proceeds towards mastery in . . . .;** **2) While he is moving towards mastery, adequate __________ are provided to aid him.**
58. small steps **prompts**	

CHAPTER III

PROGRAMING AS EXPERIMENTAL TEACHING

	59. Educators and psychologists have long been aware of the effectiveness of "learning by doing". The principle of active responding is utilized in programed instruction. **We require the student to _______; by adequate prompts and by breaking the subject into small steps, we insure _______ responses; by revealing the correct answer after the response is given, we provide . . . .**
59. respond (be active) ***or equivalent*** **correct** **knowledge of results or confirmation of correct responses**	**60. In the procedures most often used at this time, students are required to write an answer. Excluding such subjects as drawing and perhaps spelling, do you think that students can learn as effectively if they just think or say the answers? ___________**
60. The question asks what you think.	**61. There is no firm proof that responses to programed materials should always be written. Research is needed with students of all ages doing programs of many sorts.** **Which procedure would probably be faster in all cases—writing or thinking the answers? _______**

61. thinking (The student should think before he writes!)	62. Whether writing each response is an aid to learning is an experimental question. However there is a pragmatic reason for requiring written responses. Even if the student doesn't need to write down his responses, the __________ (who?) needs to know what the student did.
62. programer	63. Programing is a self-correcting teaching technique. When the programer writes an item that is too hard to understand, his students will tell him so by . . . .
63. making mistakes or not answering *or equivalent*	64. Research may demonstrate what kinds of students and/or what kinds of programs benefit from the actual writing of each response. But programers need evidence of bad items and bad sequences so that they know how and where to ______ their programs.
64. revise or improve or correct *or equivalent*	65. A programer corrects items and sequences on which students have made errors because the most efficient teaching procedure is one in which the students make _______ ________s.
65. correct responses or few errors	66. A teacher prepares a lesson and checks his preparation in much the same way as a programer. If his students are listening to him talk, and a point is not clear, will he generally realize this? ____ Do students always listen? __
66. Yes. (If he's watching them.) No.	67. Most subject matters have some sort of logical order to them. Most teachers try to present their subjects in logical steps. If absent or not listening however, the student . . . .
67. misses steps or loses out *or equivalent*	68. A frame, or item, in a program can remain in front of a student until he reads and responds to it. His response immediately tests the adequacy of his reading. Programed instruction forces the student to "pay _________" because the program waits until he does so.

68. attention	69. Programed instruction is a technique for controlling the instructional process. By requiring each student to attend to and take each step in the development of a subject, the programer _______s the student's learning. By being able to keep the item in front of him until he determines the required response, the student _______s his own rate of learning.
69. controls (insures) *or equivalent* controls (adjusts) *or equivalent*	70. A rapid reader who thinks rapidly can go through a program at a rapid rate. A slow reader who needs time to think can go through a program at a slow rate. Each student controls his own ____ of learning by going to the next item only when he is ready.
70. rate or speed	71. Students could make many errors in taking a long program and yet pass a test indicating they had learned the subject. (True/False) _____
71. True	72. A program takes each point in its subject matter from introductory frames to prompted frames to the final frames in which the student can respond on his own. Suppose a programer finds that his students are making errors on the final frames on some point. To improve the program, the programer should: a) add more items on the subject, b) add prompts to the final frames. (a or b) ____
72. a (There are other kinds of revisions, but adding prompts to final frames is not one.)	73. If a programer adds prompts to his final items, the students will be (more—less) likely to make errors on THESE ITEMS.
73. less	74. If a programer adds prompts to the final items in order to reduce the number of errors, has he led students to DO what a program is supposed to lead them to do? ___
74. No. (He has produced correct responding, but not correct responding without prompts.)	75. Students could make very few errors on a program and yet be unable to pass a test indicating mastery of the subject. (True/False) _____

75. True.	76. In revising his program, the programer tries to: (reduce—increase) the number of errors; (reduce—increase) the amount learned. Do you need confirmation of your responses to this item? ___
76. reduce increase Yes or No. (It is pretty obvious!)	77. The programer knows exactly where to revise his program because he gets a record of . . . . when he tries it with students.
77. student errors or performance or bad items or what works or how well it teaches *or equivalent*	78. Knowing where to revise a program is NOT the same as knowing how to revise it. In order for the programer to assert that the revision is an improvement, the program (must—does not need to) be tested again.
78. must	79. A programer must specify the terminal behavior to be attained by the program. The above sentence means that the teacher (i.e., programer) must be able to say (i.e., __________ *Tech. Term*) exactly what it is that he wants students to learn (i.e., the ________ ________ *T.T.*).
79. specify terminal behavior	80. A teacher may wish to have his students "understand the decimal number system". In order to program this, he will have to sp_____ exactly what it is that students who "understand" can SAY and DO.
80. specify	81. The terminal behavior "knowing South American geography" needs further specification. What a Brazilian programer might specify as mastery would probably be (the same as—different from) what a New York programer would specify.
81. different from	82. "Understanding psychological principles" (is—is not) an adequate specification of terminal behavior for a psychology program.
82. is not!	83. In order to organize his teaching, the programer has to specify exactly the _____ ________ (*T.T.'s*) he expects of his students.

83. terminal behavior	84. Since students can sometimes get through certain programs without many errors but also without learning much, most of us feel more confident if we can be shown some kind of ________ which the students could not pass until taking the program.
84. test or examination *or equivalent*	85. For an objective view of what a program teaches, we may: a) read what the programer says is the terminal behavior; b) look carefully at an appropriate test that students have been shown to pass; c) analyze the content of the program ourselves. Rank these three choices: best ________ 2nd best ________ least trustworthy ________
85. best b Your choice on a and c: do you trust yourself or the programer more?	

CHAPTER IV

BRANCHING

86. The programer must specify the terminal behavior and design a sequence of steps through which the student can be led to mastery. With these two tasks in mind, do you think it would be easier to program for high school students:

a) correct spelling of a normal-sized English vocabulary

or

b) "good" expository writing? _____
a or b

---

86. Your choice:
If you chose a, go to item 87.
If you chose b, go to item 95.

87. You felt that teaching the correct spellings of a normal-sized vocabulary would be easier than teaching "good" writing.

Can we specify the terminal behavior that indicates mastery of spelling? ____

---

87. Yes—(Dictionaries are a great help here!)

88. We can specify what correct spelling is. We can also survey the spelling behavior of our students and discover what the average student needs to learn, so we know what we want to teach.

Having located what should be taught, the programer's job would then be to design a sequence of _____ leading students to mastery.

88. steps or items *or equivalent*	89. There are some spelling rules that work, but English spelling has a great many pitfalls! One approach to irregular spellings would be to teach each irregular word by rote: practice it until learned. If we do this, the program will become a _ _ _ _-learning device.
89. rote	90. If we teach irregular spellings by rote-learning, we have to provide enough practice for each student. Do students all need the same amount of practice to learn to spell 'rhythm' or do individuals need different amounts of practice? __________ same/different
90. different (This finding is confirmed in every learning experiment!)	91. It is difficult to decide how many steps are needed for each word taught by rote memorization. A program of four steps per word would be (inefficient—ineffective) for a student who required ten steps. A program of ten steps per word would be (inefficient—ineffective) for a student who required two steps.
91. ineffective (He wouldn't learn.) inefficient (He's wasting time.)	92. Many people believe that there is a "visualization" factor involved in good spelling; i.e., rather than memorizing letter sequences by rote, the good speller "knows how the word should look". In order to teach visualization, the programer would have to ______ exactly what "knowing how it should look" is. This has not been done!
92. specify (say, know) *or equivalent*	93. The behavior involved in good spelling may not be as easy to specify as it appears at first glance. Also rote-memorization confronts the programer with problems of individual differences. Dogmatic assertions that programing IS best for "rote" subjects like spelling have little basis in fact. Experimental tests of the advantages and limitations of programing are necessary. Note: has this sequence led you to believe that spelling can not be programed efficiently? ___

93. Your choice. **We don't want to be dogmatic either!**	**94. What can and what cannot be taught, or best taught, by the technique of programed instruction is an experimental question. Dogmatic assertions can be ignored.** **With adequate programs and adequate research, we can .... the answers to questions about the potentialities of programing.**
94. discover **or** **learn** **or** **search for** ***or equivalent***	**94ff. You have just completed one TRACK of a BRANCHING SEQUENCE. The track you took depended on your choice of an area easiest to program.** ***Glance through, or do if you like, the other track, items 95-104.***
	95. You felt that "good" expository writing would be easier to program than spelling. **Can we specify some of the skills involved in writing acceptable science reports, business letters, and other expository writings? ____** **Do you believe that we can specify all of the skills involved? __________**
95. Yes. **Your opinion.**	**96. We know some of the techniques of writing which lead readers to follow an argument, to understand a statement, or to become confused and disinterested. These are "do's and don't's" which textbooks and teachers have been teaching in composition classes.** **In terms of what teachers and textbooks do, we can specify the ________ ________ for at least part of writing skills.**
96. terminal behavior	**97. If, in the program on composition, we ask the students to rephrase an awkward sentence on a given topic, will we get the same correct response from all students? ___**
97. No. (English is pretty flexible.)	**98. If students are to be given a problem on paragraph organization, we may try this "item" on many students and find several correct answers for which we must provide confirmation.** **After several group testings, does it still seem likely that some student will arrive at a novel but correct solution to the problem? _____**

98. Yes.	99. If a student arrives at a novel solution and is not sure of himself, his response should be _______ed.
99. confirmed	100. Many people feel that the teacher is the most efficient "technique" for teaching composition because the teacher can provide knowledge of results for the students' unpredictable right answers. If students discuss their answers among themselves, they can also learn from each other. Do you believe that a program could cover this material? ______________.
100. Your opinion.	101. It is possible to lead each student through large sets of responses, hoping that most of the responses that all the students would have made will be covered? _____.
101. Yes. (If any are left out, this will be discovered when the program is tested.)	102. Many programers assume that any subject matter that can be taught by older techniques can be taught by the new technique. Does this mean that the resulting program in "good" writing will be the most efficient technique? _____________.
102. Not necessarily.	103. Dogmatic assertions that programing is the best method of teaching or that it CAN'T teach something have no basis in fact. Experimental tests of the advantages and limitations of programing are needed. Note: has this sequence led you to believe that "good" writing can not be programed efficiently? _____________.
103. Your report. We don't want to be dogmatic, either!	104. What can and what cannot be taught, or best taught, by the technique of programed instruction is an experimental question. Dogmatic assertions can be ignored. With adequate programs and adequate research, we can . . . . the answers to questions about the potentialities of programing.

104. discover
or
find
or
search for
or equivalent

104ff. You have just completed one TRACK of a BRANCHING SEQUENCE. The track you took depended on your choice of an area easiest to program.

Glance through, or do if you like, the other track, items 87-94. Then go to item 105.

---

105. The "moral" of each branch in this program was the same: we need research. No matter where you started, the end point was the same.

Sending students through different sequences by a choice depending on their opinions, preferences, or preconceptions is one application of the b______ing technique in programing.

---

105. branching

106. A branching sequence provides different pathways through the program. Which branch a student takes will depend on which ______ of answers the student makes at some crucial item.

---

106. choice
or
selection
or equivalent

107. Students taking advanced courses frequently need remedial instruction in some skill on which the advanced course depends. For instance, a terminal frame on logarithms might be included in the early part of an advanced math course. Two choices might be given, one indicating a need for a quick brush-up, the other indicating adequate mastery.

A student who chooses the second answer goes on to advanced material, while students choosing the first answer are sent through a remedial ____________ sequence. *Technical Term*

---

107. branching

108. Most people agree that individuals differ. The branching technique is one method of taking account of __________ __________s.

---

108. individual differences
or
different individuals
or
differing abilities
or equivalent

109. Writing a branching sequence is hard work! The programer not only has to write extra items but also has to provide the choices to determine the branches. We took the easy way out—your choice was a matter of opinion, neither right nor wrong.

To send the student on a remedial branch, the programer must provide exactly THE wrong answer that the student needing remedial work will be ______ to select.

109. likely
or
inclined
or
sure
or equivalent

To the student:
Because of the format of this program, we cannot do justice to one method of programing. Use your imagination for the following item. Imagine each part of it as being on a separate page. Inspect all parts.

110. Scrambled texts are the best known examples of the technique of branching. In a scrambled text, the student reads some material and chooses one of 2, 3, or 4 answers to a question. If he chooses an incorrect answer, he is sent to a new page explaining why it is incorrect and told to go back and choose again. If he chooses the correct answer, he flips to a new page for new material.

If there are 4 choices, how many remedial pages could a poor lost student read before advancing to the next step forward? ***Choose one of the following but inspect all answers.***

a) 1 : go to "page A"
b) 3 : go to "page B"
c) 4 : go to "page C"

"page A". You said 1. You should read more carefully. The item said that there were FOUR choices. Only one is correct. Come now! How many wrong choices can a student make? Go back to item 110 and choose a better answer.

"page B". You said 3. You are correct.

If a student does not have the appropriate background to answer the question, he will choose incorrectly. When he makes such an error, he is sent to a page which teaches him why such an answer is not correct. Should a student who does not make this error have to have such an explanation? ***Choose one.***

a) Of course not! Go to item 111.
b) It's good for him anyway. Go to item 111.

"page C". You said 4. Your arithmetic is not very good! The item said that there were FOUR choices. One of these choices has to be correct, doesn't it? Therefore, how many wrong choices could a student make? Go back to item 110 and choose a better answer.

---

110. "page B"

Your choice

111. A programed text which branches at every item, referring students to different pages of a text depending on their choice of answers is called a _________ text.

---

111. scrambled
(TutorText is a brand name!)

112. If almost all students make the same error on a particular item in a program, the programer should (provide a remedial branch—revise the item or the sequence).

112. revise (The remedial branch should be part of the program if everyone takes it!)	**113. Should a student who already knows the material go through it anyway if many other students need it? ____.** **In answer to this question, a person who writes branching programs would say (yes—no). ____** **A person who writes straight line or linear programs would probably say (yes—no). ____**
113. your opinion **no** **yes (He makes them do it!)**	**114. Most programs which employ the branching technique use multiple-choice items.** **Is it possible to have the student produce rather than select an answer to determine which item he should work on next? ____**
114. yes (especially in a remedial gap-in-his-knowledge situation)	**115. Linear or straight-line-for-everybody programs such as this one (may—must not) use multiple-choice items.** **Branching programs (may—cannot) require students to construct rather than select an answer.**
115. may **may**	

CHAPTER V

USES AND DEVICES

	116. One goal of education is the production of independent readers and listeners, people who can search for, absorb, and evaluate information in books, lectures, et al. We have said that programed instruction is a _____ of teaching; therefore, it should be adaptable to many educational ____________, including the fostering of independent study.
116. technique or method *or equivalent* goals or philosophies *or equivalent*	117. The amount of material that can be presented in a single frame of a program depends to a large extent on questions of design, but generally it is limited. If the goal of a reading program (in any subject) is to develop independent search of materials, we must "wean" the student from small bits of material. We must lead him to deal with increasingly ______ chunks of material.
117. large(r) or big(ger)	118. Tabular or pictorial presentations, globes, laboratory equipment, and many other outside materials have been used with programs. Large passages to be read can be presented on "panels" (a technical term of uncertain derivation). A paragraph, an article, or even a book could be presented as a "_ _ _ _ _".

118. panel	119. A panel accompanies this program. It will be found in the back of the book. The panel is a condensation of part of an article written by _. _. _______ . *(Find the answer on the panel. This requires you to find the panel!)*
119. B. F. Skinner (The programers take responsibility for its "choppy" nature. It has been severely condensed.)	120. Generally, the student is instructed to read the panel through and to keep the panel where he can refer to it during subsequent frames of the program. So, read the panel. *Answer this question after reading the panel.* The panel discusses ________ very different kinds of teaching machines? how many
120. 2 (Pressey's and Skinner's)	121. When the student has read the panel, we can assume that he knows the material contained in it. True or False _____
121. False.	122. To master the material on the panel, the student should actively _______ to the material.
122. respond (react) *or equivalent*	123. The programer has a choice of what to do with the panel. The methods of dealing with it depend on assumptions about the skills of the students. We can direct attention to significant names, dates, or terms. For example: "An automatic self-testing machine was designed by _______ in the ____'s."
123. (Sidney) Pressey 1920's	124. The student's attention may be directed to the relationship between the new material and material he already knows. For instance: "The principles of active participation, insurance of correct responding, and immediate knowledge of results (feedback) are basic to programed instruction. Pressey instrumented two of these with his devices. Which two principles were involved in Pressey's machines? 1. _________ 2. _________________ .

PANEL

From Chapter V, frame 119, you may keep this in view.

Condensed from: "Teaching Machines" by B.F. Skinner

The possibility [of capital equipment which will encourage the student to take an active role in the instructional process] was recognized in the 1920's, when Sidney L. Pressey designed several machines for automatic testing. In using the device, the student refers to a numbered item in a multiple-choice test. He presses a button corresponding to his first choice of answer. If he is right, the device moves on to the next item; if he is wrong, the error is tallied, and he must continue to make choices until he is right. Such machines (Pressey, 1926) could not only test and score, they could teach. The immediate report supplied by a self-scoring device can have an important instructional effect.

Pressey's machines were designed against the theoretical background [of a psychology dominated by principles of "frequency" and "recency", "massed and spaced practice".] As versions of the memory drum, they were primarily testing devices. They were to be used after some amount of learning had already taken place elsewhere. By confirming correct responses and by weakening responses which should not have been acquired, a self-testing machine does, indeed, teach. Pressey seems to have been the first to emphasize the importance of immediate feedback in education and to propose a system in which each student could move at his own pace. He saw the need for capital equipment in realizing these objectives. Above all, he conceived of a machine which [in contrast with the audio-visual aids which were beginning to be developed] permitted the student to play an active role.

An appropriate teaching machine will have several important features. The student must compose his response rather than select it from a set of alternatives. One reason for this is that we want him to recall rather than to recognize—to make a response as well as see that it is right. Another reason is that effective multiple-choice material must contain plausible wrong responses, which are out of place in the delicate process of "shaping" behavior because they strengthen unwanted forms.

In [Skinner's] version of the machine for advanced students, the student inserts the material, printed on a 12-inch disk, into the machine, closes and locks it. One frame is visible through a window. The student writes his response and, by lifting a lever on the front of the machine, he moves what he has written under a transparent cover and uncovers the correct response in the remaining corner of the frame. He scores himself (with an appropriate movement) and proceeds to the next frame.

Encl. "E"

METHOD OF USING "AGREE-DISAGREE" FORM

On the following page, you will find an "agree-disagree" form, stating certain premises concerning educational television and its relationship to extension activities. Using the simple code, please indicate your agreement or disagreement with the statements.

You will be given an opportunity to complete the "agree-disagree" form:

1. Before the telecast.
2. After the telecast.
3. After the discussion.

---THE FORMS WILL NOT BE CHECKED---THEY WILL NOT BE GRADED ---

---THEY WILL NOT BE COLLECTED---

Please reel free to alter your opinion--mark--scratch--scribble--and/or otherwise mutilate the form.

N U E A
AGREE - DISAGREE FORM

For your convenience, please use the following code:

/ - Before the telecast
# - After the telecast
* - After the discussion

Agree	Agree with Reservations	Agree Slightly		Disagree	Disagree with Reservations	Disagree Slightly
			0. Lincoln, Nebraska is a difficult city to reach using modern transportation.			
			1. Educational television is most often used to supplement and enrich classroom learning in the elementary grades.			
			2. The utilization of television in extension activities is generally consistent with the basic premises stated in the NUEA Policy Manual.			
			3. Serving small specialized study groups by television is difficult because of the mass audience approach which is inherent in the television medium.			
			4. The immediate response limitation which is inherent in television instruction, limits its use in extension activities.			
			5. Necessarily, television credit courses are narrow in their approach and have little appeal to the casual viewer.			
			6. One of the most important functions of television in extension activities should be to motivate adults to continue their education in conventional ways.			
			7. Like educational radio, educational television has reached its zenith and its growth will be limited in the future.			

Encl. "F"

PROPOSED DISCUSSION OUTLINE

To: Co-chairmen of Discussion Groups:

Discussion leaders can, of course, conduct the discussion along any line they wish. As possible assistance to the discussion groups the following suggestions are made:

This Work-Study Conference on New Educational Media was planned to provide persons working in Adult Education with a look toward the future in methods of planning for, and use of, varied educational media. It is suggested that the discussion leaders keep the group looking toward the future.

Many different approaches on new educational media was presented during this conference. It was thought that each Division and/or Committee in NUEA would identify those methods most helpful to their instructional problems, and perhaps expand the thinking into an action program.

FIRST:
The interest groups might divide into small groups and hold a buzz session to define those types of media which would be most helpful in the specific instructional area - i. e. Correspondence Study, Evening Classes, Extension Classes, etc.

SECOND:
After the group has spent a short time defining the media, perhaps they could try to identify which type or types would be most helpful. The group should always keep in mind the possible use of cross media or multi-media kits. In this phase of the discussion it is suggested the group keep working toward the ultimate goal they would like to recommend to improve methods of of communication and teaching.

THIRD:
At this point, the group might wish to assign priority to certain specific needs, and suggest methods of obtaining the materials. Perhaps the group could recommend certain outstanding leaders who might serve as educational consultants in the production of needed materials.

The chairmen should keep in mind that from this Work-Study Conference on New Educational Media a handbook is to be developed for use in state and area meetings. This handbook will define media, indicate its special strengths in adult education, methods of producing and/or developing, and possible best methods of utilizing. It will further suggest ways conferences of this nature can be planned in states or local areas, and provide information on the media available to help in making the local presentation.

Each subject area group will be asked to report its recommendations on Sunday morning starting at 10:30 A. M. in the Auditorium. Note: All reports should be visualized on the overhead projector and/or Polaroid type lantern slides. The Graphic Section established for this Conference will have specialists who can help you in preparing your visuals for the report.

REPORTS:

Committee reports may take different forms, but in general should indicate the following:

a. Division or Committee name.
b. Type or types of media most helpful to your instructional problems.
c. Recommended method of starting a study regarding needs, and methods of securing the needed materials.
d. Any special study conferences needed to further develop the specifics, and possible method of moving forward - i. e. Study Committee, Action Committee, Additional Work-Study Conferences on New Media, etc.
e. Names of the chairmen and committee members should be provided for the final conference report.
f. Only the general recommendations from your committee need to be visualized for the presentation on Sunday morning. Committee names, and more specific information should be provided for the final reports.

Encl. "G"

EVALUATION OF WORK-STUDY CONFERENCE ON NEW EDUCATIONAL MEDIA

Lincoln, Nebraska April 28-29, 1962

Please evaluate the following items by checking the rating scale in the right hand column.

	Superior 3+	Very Good 2+	Good 1+	Average 0	Below Average 1-	Little Value 2-	No Value 3-
1. To what extent did the Work-Study Conference on New Educational Media help you gain a better understanding of new media in adult education?							
2. What value was each of the following presentations: a. Wesley C. Meierhenry's - "Importance of the Conference to Adult Education" - Opening address.							
b. A film report on the 1961 policy statement of NUEA - narrated by Dean R. J. Blakely, State University of Iowa.							
c. William H. Allen's address "Educational Media and Adult Education-A Group Programmed Learning Experience" - a two screen slide presentation.							
d. The presentation on programmed learning was made in three phases. Would you rate each of the phases?							
Phase one - Film on programmed instruction "One Step at a Time".							
Phase two - Your experience with "A Programmed Primer on Programing" and group discussion.							
Phase three - Robert T. Filep's address on "What Do We Know About Programmed Learning?" at the noon luncheon.							
e. Robert A. Cox's "Multi-Media" presentation in the auditorium.							
f. Telecast - "Television and Adult Education" - produced by Ralph Steetle, Oregon State System of Higher Education.							
g. Agree-Disagree Form - completed before and after telecast.							
h. Dean W. K. Begg's address "Some New Educational Functions" at the banquet.							
Of what value were the following items: 3. Your Division discussion session on Saturday evening.							
4. Reports given by the Divisions on Sunday morning.							
5. The effectiveness of the "systems" approach (sequential topical programming) used at this conference.							
6. Your evaluation of the entire Work-Study Conference on New Educational Media.							

7. If you should plan a similar new media conference, would you be interested in obtaining the audio-visual materials used at the Lincoln conference? (Please circle your choice)

NUEA Policy Film	Yes	No	Television Telecast (film)	Yes	No
Allen Slide Series	Yes	No	Programed Primers	Yes	No
Cox Multi-Media Kit	Yes	No			

8. Is there a need for the preparation of a handbook on the use of new media in adult education? Yes No

2. What value was each of the following presentations:
   a. Wesley C. Meierhenry's - "Importance of the Conference to Adult Education" - Opening address.
   b. A film report on the 1961 policy statement of NUEA - narrated by Dean R. J. Blakely, State University of Iowa.
   c. William H. Allen's address "Educational Media and Adult Education-A Group Programmed Learning Experience" - a two screen slide presentation.
   d. The presentation on programmed learning was made in three phases. Would you rate each of the phases?

      Phase one - Film on programmed instruction "One Step at a Time".

      Phase two - Your experience with "A Programmed Primer on Programing" and group discussion.

      Phase three - Robert T. Filep's address on "What Do We Know About Programmed Learning?" at the noon luncheon.
   e. Robert A. Cox's "Multi-Media" presentation in the auditorium.
   f. Telecast - "Television and Adult Education" - produced by Ralph Steetle, Oregon State System of Higher Education.
   g. Agree-Disagree Form - completed before and after telecast.
   h. Dean W. K. Begg's address "Some New Educational Functions" at the banquet.

Of what value were the following items:

3. Your Division discussion session on Saturday evening.
4. Reports given by the Divisions on Sunday morning.
5. The effectiveness of the "systems" approach (sequential topical programming) used at this conference.
6. Your evaluation of the entire Work-Study Conference on New Educational Media.
7. If you should plan a similar new media conference, would you be interested in obtaining the audio-visual materials used at the Lincoln conference? (Please circle your choice)

NUEA Policy Film	Yes	No	Television Telecast (film)	Yes	No
Allen Slide Series	Yes	No	Programed Primers	Yes	No
Cox Multi-Media Kit	Yes	No			

8. Is there a need for the preparation of a handbook on the use of new media in adult education? Yes No
9. Is there a need for similar conferences to be organized at local and/or regional levels. Yes No

COMMENTS MAY BE WRITTEN ON BACK

Return to: Dr. Robert E. Stepp, Bureau of Audio-Visual Instruction,
University of Nebraska, Lincoln, Nebraska
(Self-addressed stamped envelope enclosed)

Encl. "H"

PROPOSED HANDBOOK
on
NEW EDUCATIONAL MEDIA FOR ADULT EDUCATION

I - Rules for Producing the Handbook:

- A. It must be graphic.
- B. Keep it brief and simple.
- C. Outline form - not complete sentences, etc.
- D. Clarity must be maintained.
- E. It must have continuity.

II. - The Handbook should include the following:

- A. Statement of Purpose.
- B. Table of Contents.
- C. Special problems in Adult Education, i. e. The Adult Educator and the Adult Learner. * (See attached sample of this) (need Adult Educator)
- D. What do you want to Communicate?
- E. How are you going to Communicate?
- F. With what tools?
- G. Sources of materials
- H. Case studies in use of media in Adult Education
- I. Appendices:
  - Organization of work-study conferences on New Educational Media. Include housekeeping chores on how to plan, conduct and report results of such conferences. (Possible example would be the Work-Study Conference held at Lincoln, Nebraska)
  - Include in this section possible helpful transparencies that could be ready to print onto diazo foil. (Example, some of the types of transparencies used in reporting the Division Reports at Lincoln)

* See some suggestions for possible consideration.

(suggested only)

THE ADULT LEARNER

WHILE We Recognize That

each ADULT LEARNER

is a unique individual

- Possessing

  a wide variety of

  Interests
  Abilities
  Beliefs
  Prejudices

- Emerging from a diversity of

  social
  economic
  religious
  educational
  vocational
  BACKGROUNDS

- Presenting different educational needs.

AND, while we recognize the inaccuracy of all generalizations

WE feel
that it is possible to paint in broad strokes a few of the characteristics of the ADULT LEARNER which differ from characteristics of the younger student.

THE ADULT LEARNER

- has fewer hours per day for pursuit of learning
  -he has to earn a living
  -she must care for a family
  -both have community responsibilities
  - he wants to learn in the shortest time possible
- is able to identify his own needs
  - he needs materials geared to his level of sophistication
- has formed rigidly structured beliefs
  - he is not easily "told" but is persuaded by presentation of facts by established experts
- is more interested in practical information than scholarly attainment
  - he wants knowledge which he can put to immediate use